CDX-3170

SERVICE MANUAL

E Model

Model Name Using Similar Mechanism	CDX-2180
CD Drive Mechanism Type	MG-363X-121
Optical Pick-up Name	KSS-521A

SPECIFICATIONS

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	90 dB
Frequency response	10 - 20,000 Hz
Wow and flutter	Below measurable limit

Tuner section

FM

Tuning range	87.5 - 107.9 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	13 dBf
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	62 dB (stereo), 65 dB (mono)
Harmonic distortion at 1 kHz	1.0% (stereo), 0.5% (mono)
Separation	33 dB at 1 kHz
Frequency response	30 - 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	530 - 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	32 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 - 8 ohms
Maximum power output	35 W × 4 (at 4 ohms)

General

Outputs	Line outputs (2) Power antenna relay control/Power amplifier control lead
Tone controls	Bass ± 10 dB at 100 Hz Treble ± 10 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 180 mm (w/h/d)
Mounting dimensions	Approx. 183 × 53 × 163 mm (w/h/d)
Mass	Approx. 1.3 kg
Supplied accessories	Parts for installation and connections (1 set)

Design and specifications are subject to change without notice.

FM/AM COMPACT DISC PLAYER

MICROFILM

SONY®

SERVICE NOTE

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

NOTES ON PICK-UP FLEXIBLE BOARD

The pick-up flexible board in this set is secured to the optical pick-up with an adhesive tape. Once the tape is removed, an adhering force becomes weak, and it cannot be reused.
Therefore, if the optical pick-up is replaced, replace also the pick-up flexible board with a new one.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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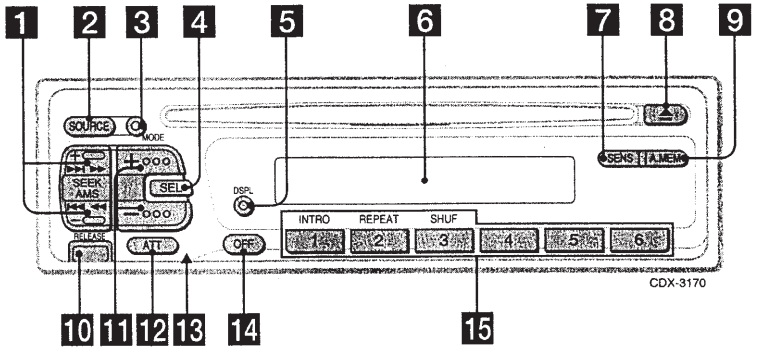
Location of controls



Refer to the pages for details.

1 SEEK/AMS (seek/Automatic Music Sensor/manual search) button 5, 6, 7
2 SOURCE (source select) button 5, 6, 7
3 MODE (band select) button 6, 7
4 SEL (control mode select) button 5, 8
5 DSPL (display mode change/time set) button 5, 7
6 Display window
7 SENS (sensitivity adjust) button 7
8 ⏏ (eject) button 5
9 A.MEM (Automatic Memory) button 6
10 RELEASE (front panel release) button 4, 10
11 ⊕ ⊖ (volume/bass/treble/left-right/front-rear control) buttons 5, 8
12 ATT button 8
13 Reset button (located on the front side of the unit hidden by the front panel) 4
14 OFF button 4, 5, 8
15 During radio reception:
Number buttons 6, 7
During CD playback:
① INTRO button 6
② REPEAT button 6
③ SHUF button 6

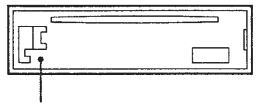
EN

EN

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Press the reset button with a pointed object, such as a ball-point pen.



Reset button

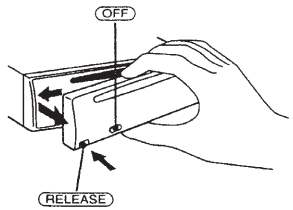
Notes
- *Pressing the reset button will erase all the memorized program and memory functions.*
- *When you connect the power supply cord to the unit or reset the unit, wait for about 10 seconds before you insert a disc. Do not insert a disc within these 10 seconds, otherwise, the unit will not be reset, and you will have to press the reset button again.*

Detaching the front panel

You can detach the front panel of this unit to prevent the unit from being stolen.

1 Press (OFF).

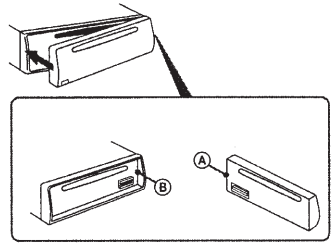
2 Press (RELEASE) to open up the front panel. Then slide the front panel a little to the left, and pull it off towards you.



Notes
- *Be sure not to drop the panel when detaching it from the unit.*
- *If you press (RELEASE) to detach the panel while the unit is still on, the unit will turn off automatically to prevent the speakers from being damaged.*

Attaching the front panel

Align part Ⓐ of the front panel to part Ⓑ of the unit as illustrated, and push until it clicks.



Notes
- *Be sure not to attach the front panel upside down.*
- *Do not press the front panel hard against the unit when attaching it. Press it lightly against the unit.*
- *Do not press hard or put excessive pressure on the display window of the front panel.*
- *Do not expose the front panel to direct sunlight, heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight where there may be a considerable rise in temperature.*

Caution alarm

If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will be activated and a beep tone will be heard for a few seconds (only for cars with an accessory position on the ignition key switch). If you connect an optional power amplifier and do not use the built-in amplifier, the beep tone will be disabled.

This section extracted from instruction manual.

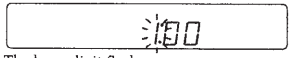
Setting the clock

The clock has a 12-hour digital indication.

Example: Set the clock to 10:08

1 Press (OFF) or (DSPL) during operation.

2 Press (DSPL) for two seconds.

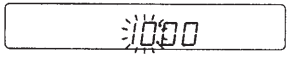


The hour digit flashes.

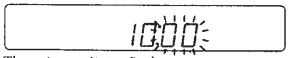
❶ Set the hour digits.

To go forward

To go back



❷ Press (SEL) momentarily.

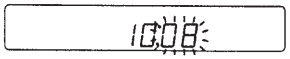


The minute digits flash.

❸ Set the minute digits.

To go forward

To go back



3 Press (DSPL) momentarily.

The clock is activated.

Note

If the car has no accessory position on the ignition key switch, the clock cannot be set unless the power is turn on. Set the clock after you have turned on the radio, or started CD playback.

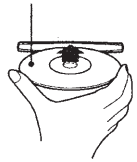
CD Player

Listening to a CD

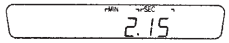
Simply insert the CD.

Playback starts automatically.

Labelled side up



If a CD is already inserted, press (SOURCE) repeatedly until "CD" appears.



Elapsed playing time

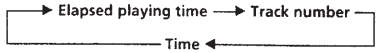
Note

To play back an 8 cm CD, use the optional Sony compact disc single adapter (CSA-8).

To	Press
Stop playback	⏏ or (OFF)
Eject the CD	⏏

Changing the displayed items

Each time you press (DSPL), the item changes as follows:



Locating a specific track
— Automatic Music Sensor (AMS)

During playback, press either side of (SEEK/AMS) momentarily.

To locate succeeding tracks

To locate preceding tracks

EN

Locating a specific point in a track
— Manual Search

During playback, press and hold either side of (SEEK/AMS) for two seconds. Release the button when you have found the desired point.

To search forward

To search backward

Note

If "_ _ " or " _ _" appears in the display, you have reached the beginning or the end of the disc and you cannot go any further.

Playing a CD in various modes

Searching for the desired track
— Intro Scan

Press (1) during playback.

"INTRO" appears in the display.

The first 10 seconds of all the tracks are played.

When you find the desired track, press again. The unit returns to the normal playback mode.

Playing tracks repeatedly
— Repeat Play

Press (2) during playback.

"REPEAT" appears in the display.

When the currently played track is over, it will be played again from the beginning.

To cancel this mode, press again.

Playing tracks in random order
— Shuffle Play

Press (3) during playback.

"SHUFFLE" appears in the display.

To cancel this mode, press again.

Radio

Memorizing stations automatically
— Automatic Memory

Stations with the clearest reception are automatically searched and memorized on each band (FMI, FMII, FMIII and AM). Up to 6 stations on each band can be stored on the number buttons ((1) to (6)) in the order of band frequency.

1 Press (SOURCE) repeatedly to select the tuner.

Each time you press (MODE), the mode changes as follows:

CD ⟷ TUNER

2 Press (MODE) repeatedly to select the band.

Each time you press (MODE), the mode changes as follows:

3 Press (A.MEM) for two seconds.

The unit will be starts scanning the selected band and memories the tuned stations on the number button (1) through (6) automatically.

Notes

- *The unit does not store stations with weak signals. If only a few stations are received, some number buttons remain empty.*
- *When a number is indicated in the display, the unit starts storing stations from the one currently displayed.*
- *If a CD is not in the unit, only the tuner band appears even if you press (SOURCE).*

Memorizing only the desired stations

You can store up to 6 stations on each band (18 for FMI, FMII and FMIII, 6 for AM) in the order of your choice.

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band.

3 Press either side of (SEEK/AMS) to tune in the station that you want to store on the number button.

4 Press the desired number button (① to ⑥) for two seconds until "MEM" appears.
The number button indication appears in the display.

Note
If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

1 Select the desired band (page 6).

2 Press the number button (① to ⑥) momentarily where the desired station is stored.

If you cannot tune in a preset station

Press either side of (SEEK/AMS) momentarily to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Press either side of (SEEK/AMS) repeatedly until the desired station is received.

Note
If the automatic tuning stops too frequently, press (SENS) momentarily until "LCL" appears in the display (local seek mode). Only the stations with relatively strong signals will be tuned in.

Tip
If you know the frequency of the station you want to listen to, press and hold either side of (SEEK/AMS) for two seconds until the desired frequency appears (manual tuning).

If FM stereo reception is poor — Monaural Mode

Press (SENS) momentarily until "MONO" appears.
The sound improves, but becomes monaural ("ST" disappears).

To go back to the normal mode, press again until "MONO" disappears.

Changing the displayed items

Each time you press (DSPL), the items alternate between the frequency and time.

EN

Other Functions

Adjusting the sound characteristics

You can adjust bass, treble, balance and fader. Each source can store the bass and treble level independently.

1 Select the Y-em you want to adjust by pressing (SEL) repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BALANCE (left-right) → FADER (front-rear)

2 Adjust the selected item by pressing + or −.
Adjust within three seconds after selecting the item. (After three seconds, the buttons work as volume control buttons.)

Attenuating the sound

Press (ATT).
"ATT" flashes.

To restore the previous volume level, press (ATT) again.

Changing the sound and beep tone

Enjoying bass and treble even at low volume — Loudness

Bass and treble will be reinforced.

Press ② while pressing (SEL).
"LOUD" appears in the display.

To cancel, press these buttons again.

Attenuating the beep tone

Press ⑥ while pressing (SEL).

To obtain the beep tone again, press these buttons again.

Note
If you connect an optional power amplifier and do not use the built-in amplifier, the beep tone will be disabled.

Turning on the clock display — Power Select Function

Only for cars with an accessory position on the ignition key switch

To turn the Power Select Function ON

Press (OFF) while pressing (SEL).
The Power Select Function ties the clock display power to the accessory position on the ignition key switch.
To avoid battery wear, the clock is not displayed while the unit is initializing.

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in series with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual component's fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.
- The use of optical instruments with this product will increase eye hazard.

If your car has no accessory position on the ignition key switch

— POWER SELECT Function

To turn the Power Select Function on
Press (OFF) while pressing (SEL).
The Power Select Function ties the clock display power to the accessory position on the ignition key switch. To avoid battery wear, the clock is not displayed while the unit is initializing.

Connection diagram

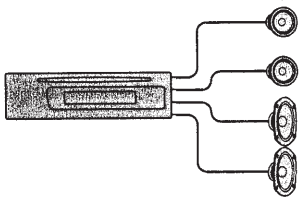
Equipment used in illustrations (not supplied)
Equipo utilizado en las ilustraciones (no suministrado)

Front speakers
Altavoces delanteros

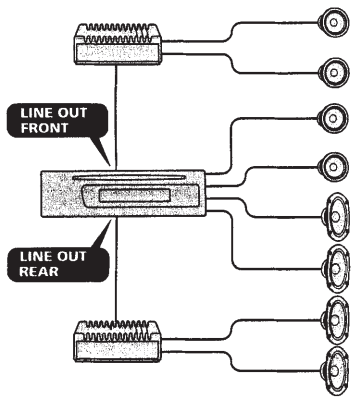
Rear speakers
Altavoces traseros

Power amplifier
Amplificador de potencia

A



B



Conexiones

Precauciones

- Esta unidad ha sido diseñada para alimentarse solamente con 12 V CC, negativo a masa.
- Antes de realizar las conexiones, desconecte el terminal de puesta a masa de la batería del automóvil a fin de evitar cortocircuitos.
- Conecte los cables conectores de alimentación **amarillo** y **rojo** solamente después de haber conectado los demás.
- Cerciórese de conectar el cable conector de alimentación rojo a un terminal de 12 V positivo que se energice al poner la llave de encendido en la posición para accesorios.
- **Conecte todos los conductores de puesta a masa a un punto común.**
- Conecte el cable amarillo a un circuito libre del automóvil que tenga una capacidad superior a la del fusible de la unidad. Si conecta esta unidad en serie con otros componentes estereofónicos, el circuito del automóvil al que se encuentran conectados debe tener una capacidad superior a la de la suma de las capacidades de los fusibles de cada componente. Si ningún circuito del automóvil tiene una capacidad tan alta como la del fusible de la unidad, conecte ésta directamente a la batería. Si el automóvil no dispone de ningún circuito para conectar esta unidad, conéctela a un circuito del automóvil con capacidad superior a la del fusible de la unidad, de forma que si se funde el fusible de ésta, no se interrumpa ningún otro circuito.
- El uso de instrumentos ópticos con este producto aumentará el peligro para los ojos.

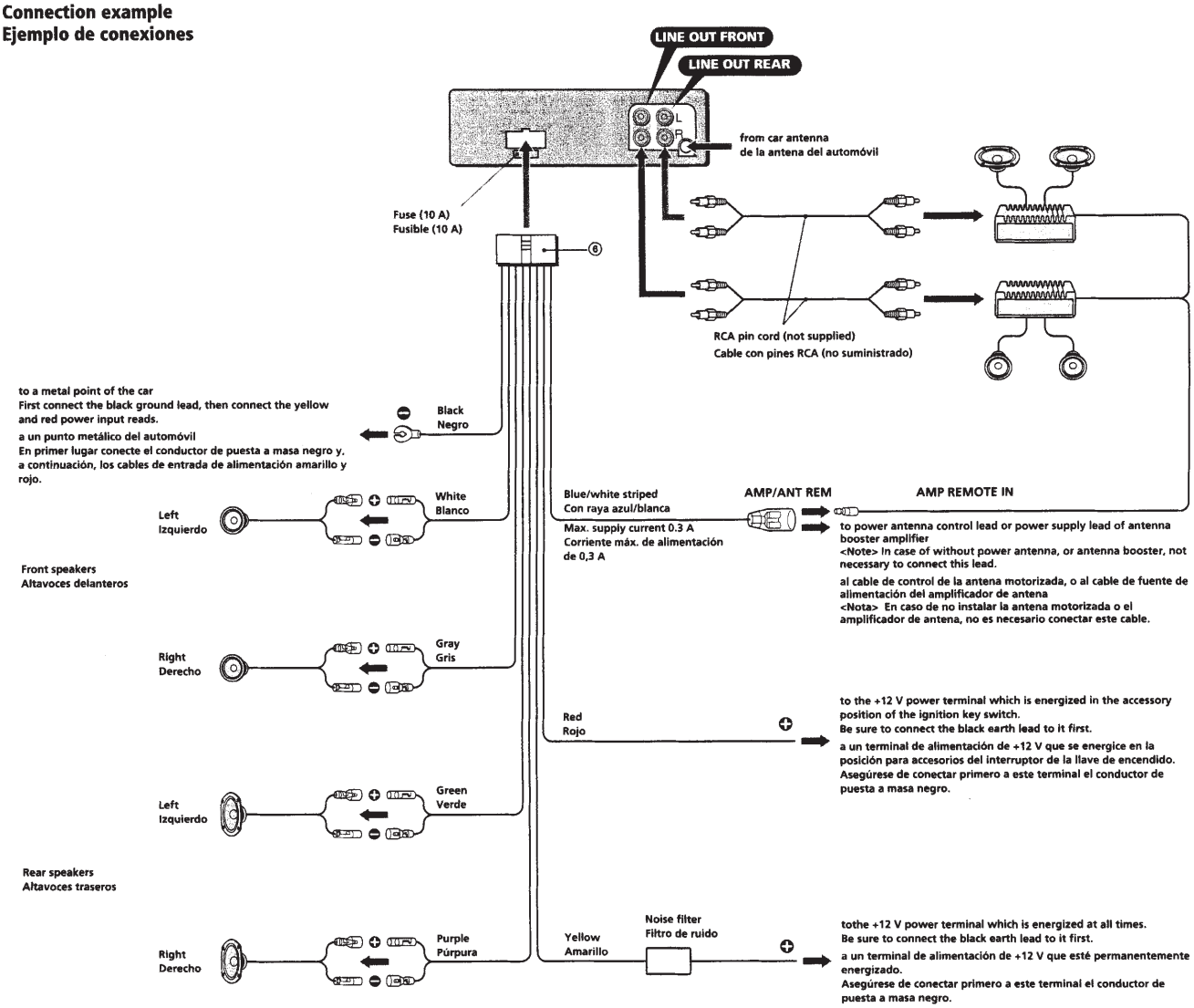
Si el automóvil no dispone de posición para accesorios en el interruptor de la llave de encendido

— Función POWER SELECT

Para activar la función de selección de alimentación
Presione (OFF) mientras presiona (SEL).
La función de selección de alimentación conecta la alimentación de la indicación del reloj con la posición para accesorios en el interruptor de la llave de encendido.
Para evitar el desgaste de la batería, el reloj no aparece durante la inicialización de la unidad.

Diagrama de conexiones

Connection example
Ejemplo de conexiones


LINE OUT FRONT
LINE OUT REAR
L
R
from car antenna
de la antena del automóvil
Fuse (10 A)
Fusible (10 A)
RCA pin cord (not supplied)
Cable con pines RCA (no suministrado)
to a metal point of the car
First connect the black ground lead, then connect the yellow and red power input reads.
a un punto metálico del automóvil
En primer lugar conecte el conductor de puesta a masa negro y, a continuación, los cables de entrada de alimentación amarillo y rojo.
Black
Negro
White
Blanco
Left
Izquierdo
Front speakers
Altavoces delanteros
Blue/white striped
Con raya azul/blanca
Max. supply current 0.3 A
Corriente máx. de alimentación de 0,3 A
AMP/ANT REM
AMP REMOTE IN
to power antenna control lead or power supply lead of antenna booster amplifier
<Note> In case of without power antenna, or antenna booster, not necessary to connect this lead.
al cable de control de la antena motorizada, o al cable de fuente de alimentación del amplificador de antena
<Nota> En caso de no instalar la antena motorizada o el amplificador de antena, no es necesario conectar este cable.
Right
Derecho
Gray
Gris
Red
Rojo
to the +12 V power terminal which is energized in the accessory position of the ignition key switch.
Be sure to connect the black earth lead to it first.
a un terminal de alimentación de +12 V que se energice en la posición para accesorios del interruptor de la llave de encendido.
Asegúrese de conectar primero a este terminal el conductor de puesta a masa negro.
Left
Izquierdo
Green
Verde
Rear speakers
Altavoces traseros
Right
Derecho
Purple
Púrpura
Yellow
Amarillo
Noise filter
Filtro de ruido
tothe +12 V power terminal which is energized at all times.
Be sure to connect the black earth lead to it first.
a un terminal de alimentación de +12 V que esté permanentemente energizado.
Asegúrese de conectar primero a este terminal el conductor de puesta a masa negro.

Notes on the control leads
- *The AMP/ANT REM lead (blue/white) supplies +12 V DC when you turn on the unit. When the AMP/ANT REM lead is connected to the power antenna, the antenna will be extended as long as the unit is turned on.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Notas sobre conductores de control
- *El conductor AMP/ANT REM (azul/blanco) suministra +12 V CC cuando conecte la alimentación de la unidad. Al conectar el conductor de control AMP/ANT REM a la antena motorizada, ésta se extenderá siempre que se active la unidad.*
- *Con esta unidad no podrá emplearse una antena motorizada desprovista de caja de relé.*

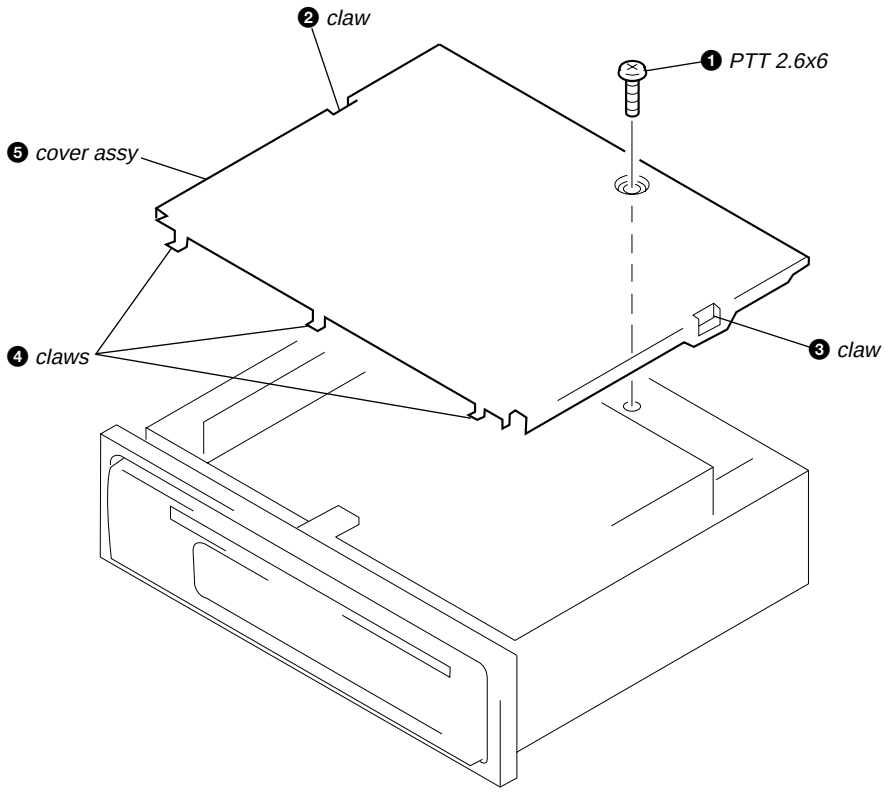
Conexión para protección de la memoria
Si conecta el conductor de entrada de alimentación amarillo, el circuito de la memoria recibirá siempre alimentación, incluso aunque sitúe la llave de encendido en la posición OFF.

Notas sobre la conexión de los altavoces
- *Antes de conectar los altavoces, desconecte la alimentación de la unidad.*
- *Utilice altavoces con una impedancia de 4 a 8 ohmios, y con la potencia máxima admisible adecuada, ya que de lo contrario podría dañarlos.*
- *No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los del altavoz izquierdo a los del derecho.*
- *No intente conectar los altavoces en paralelo.*
- *No conecte altavoces activos (con amplificadores incorporados) a los terminales de altavoces de la unidad. Si lo hiciese, podría dañar tales altavoces. Por lo tanto, cerciórese de conectar altavoces pasivos a estos terminales.*

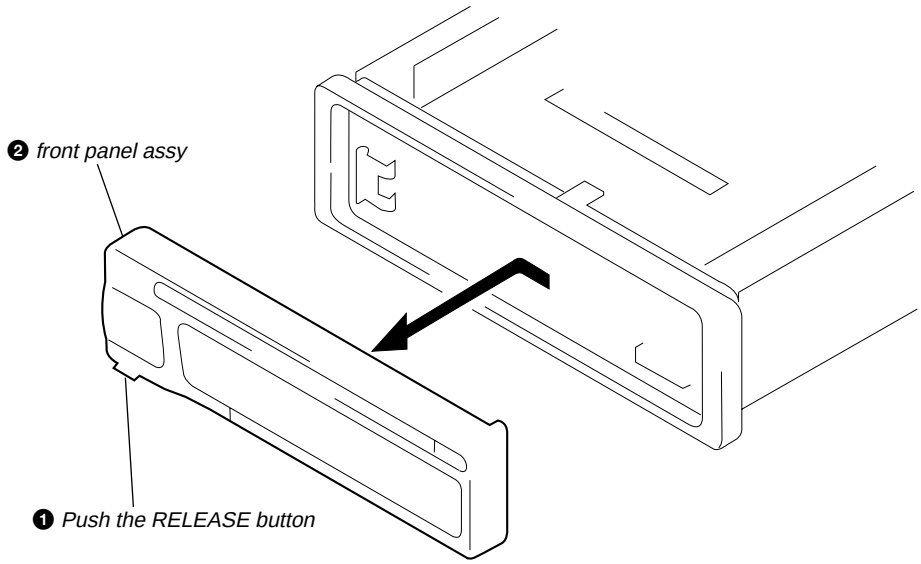
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

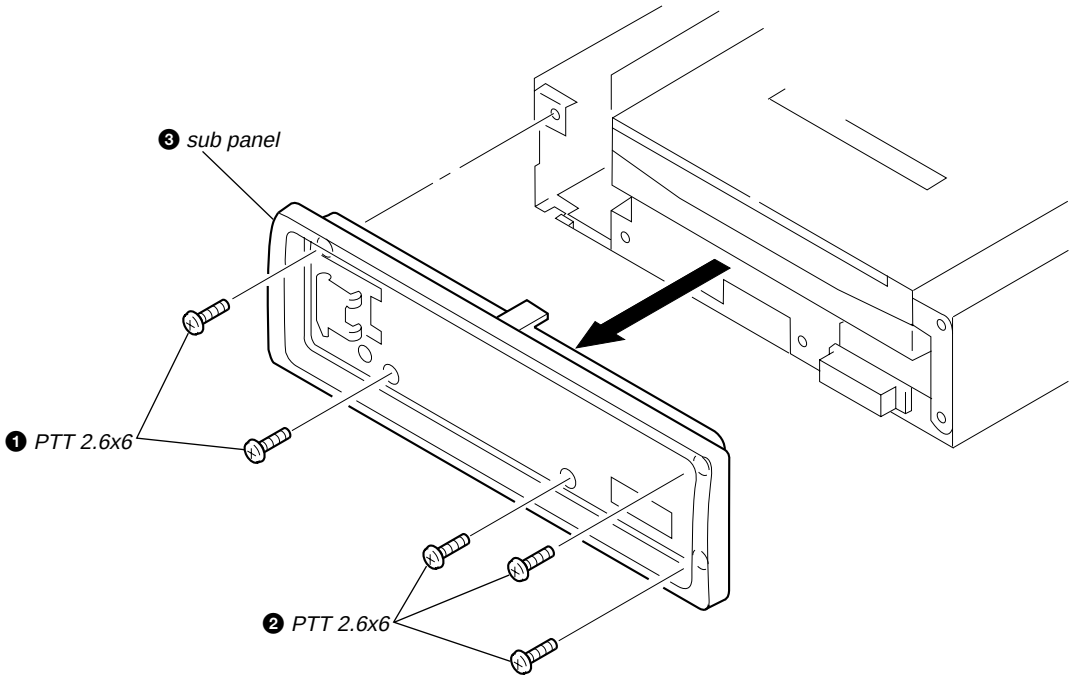
2-1. COVER ASSY



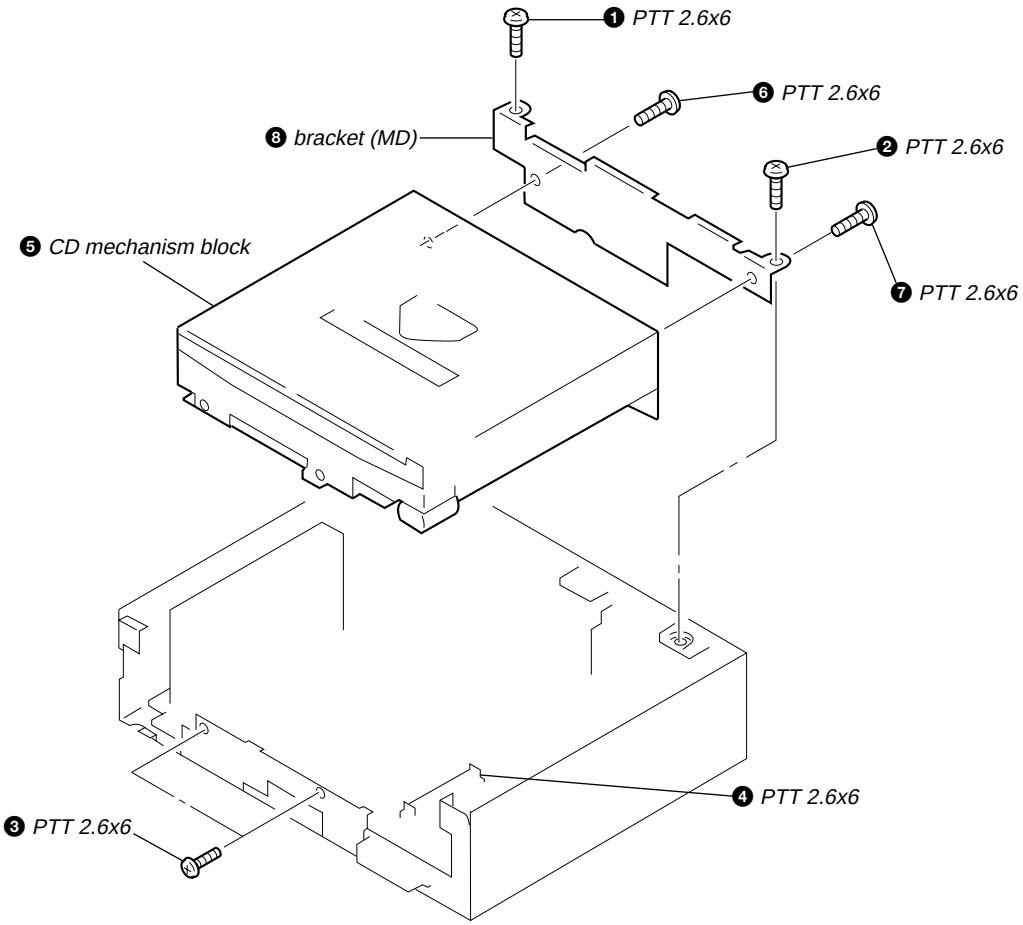
2-2. FRONT PANEL ASSY



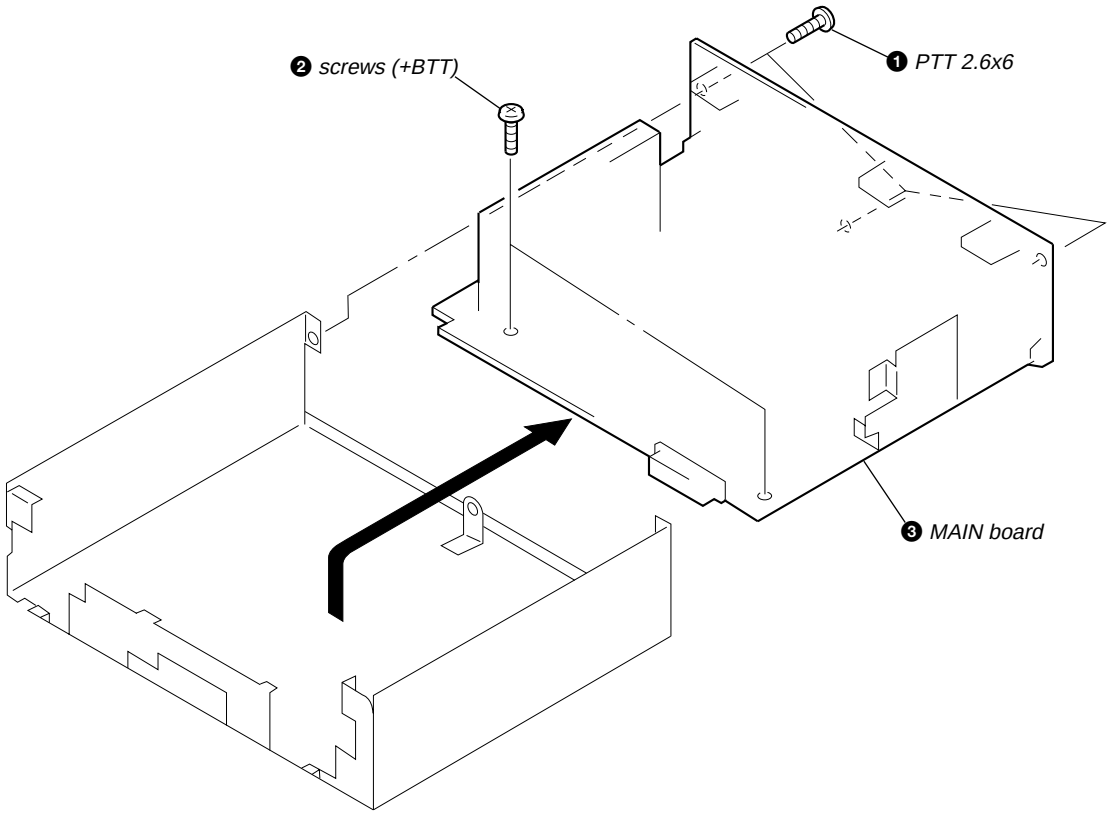
2-3. SUB PANEL



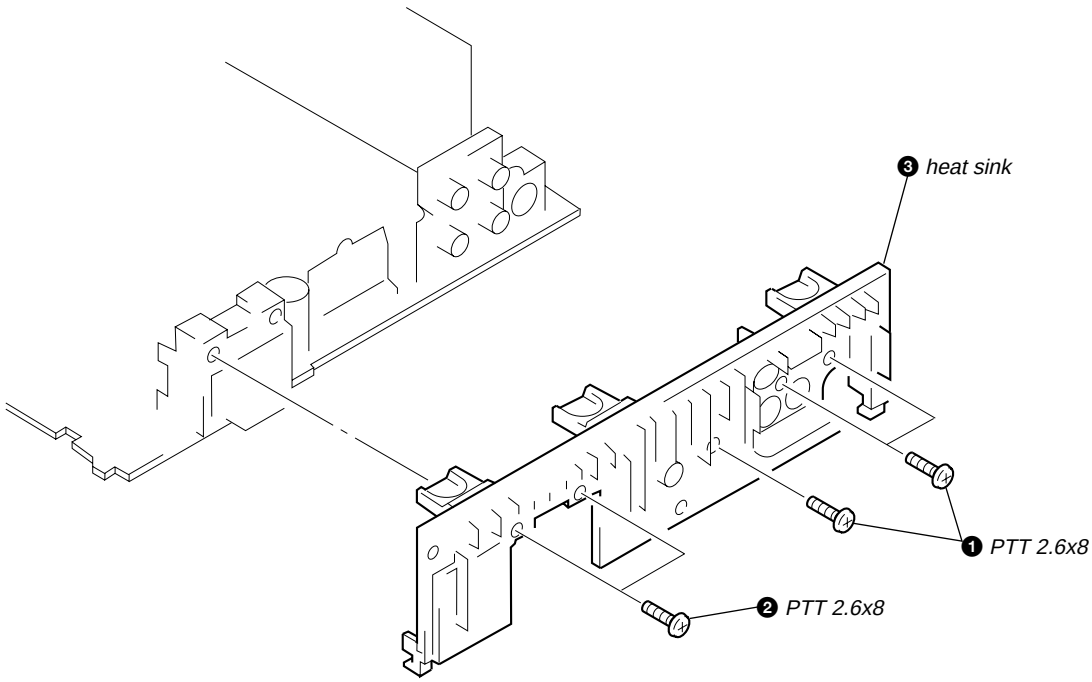
2-4. CD MECHANISM BLOCK



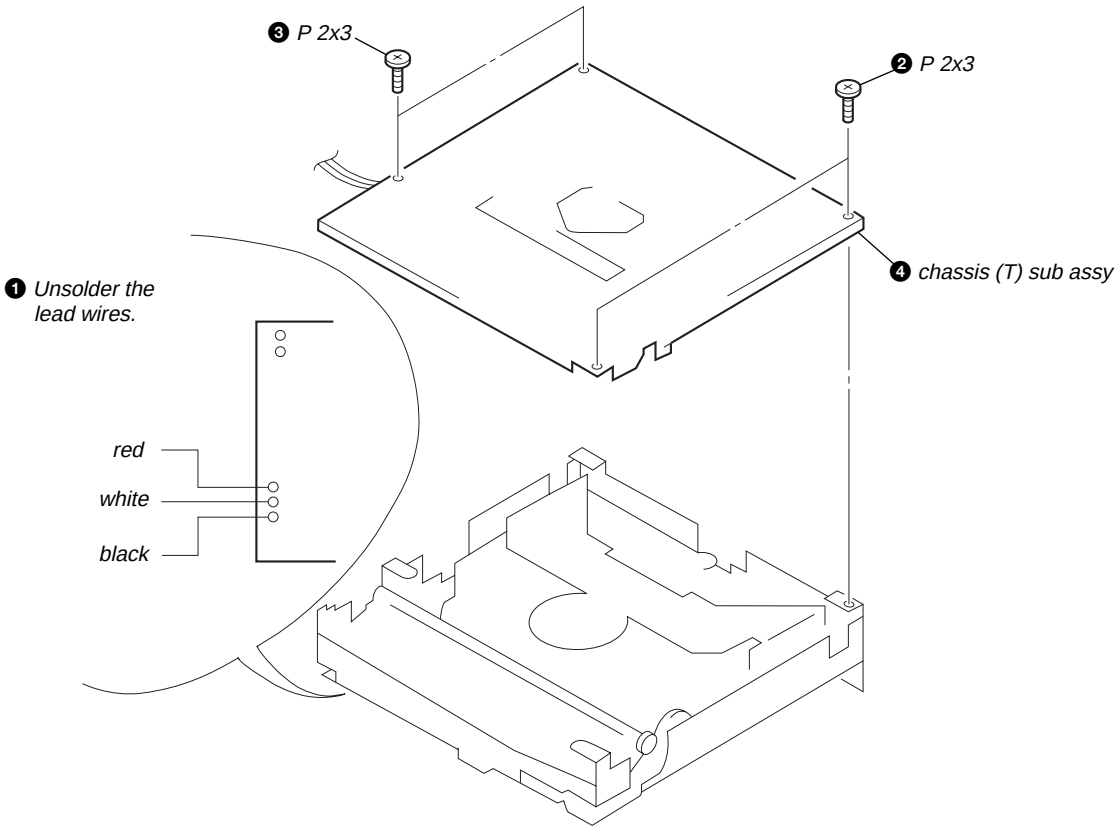
2-5. MAIN BOARD



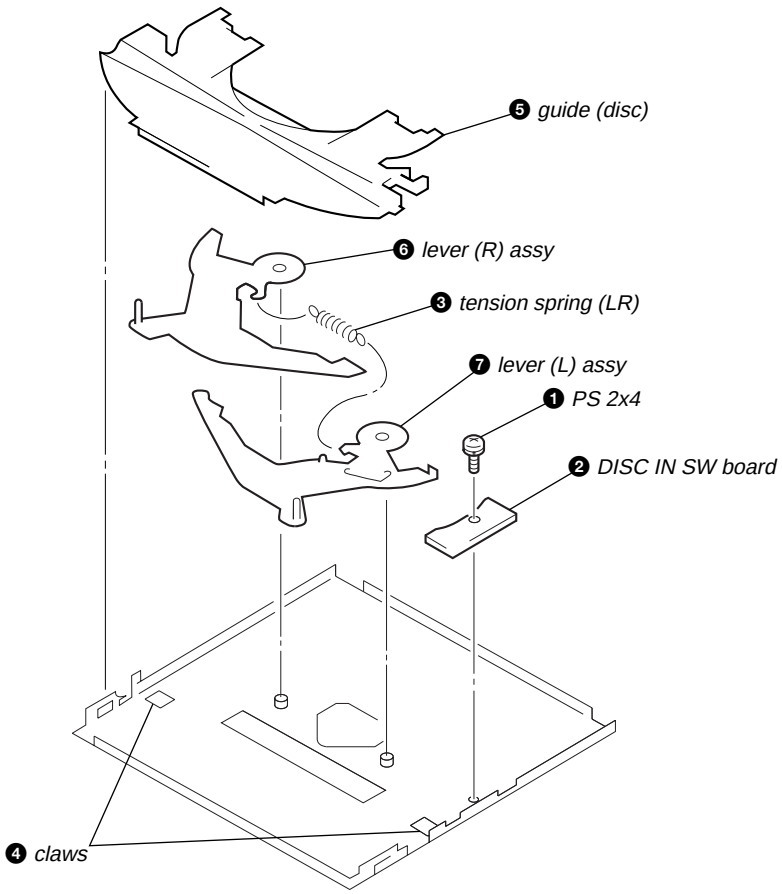
2-6. HEAT SINK



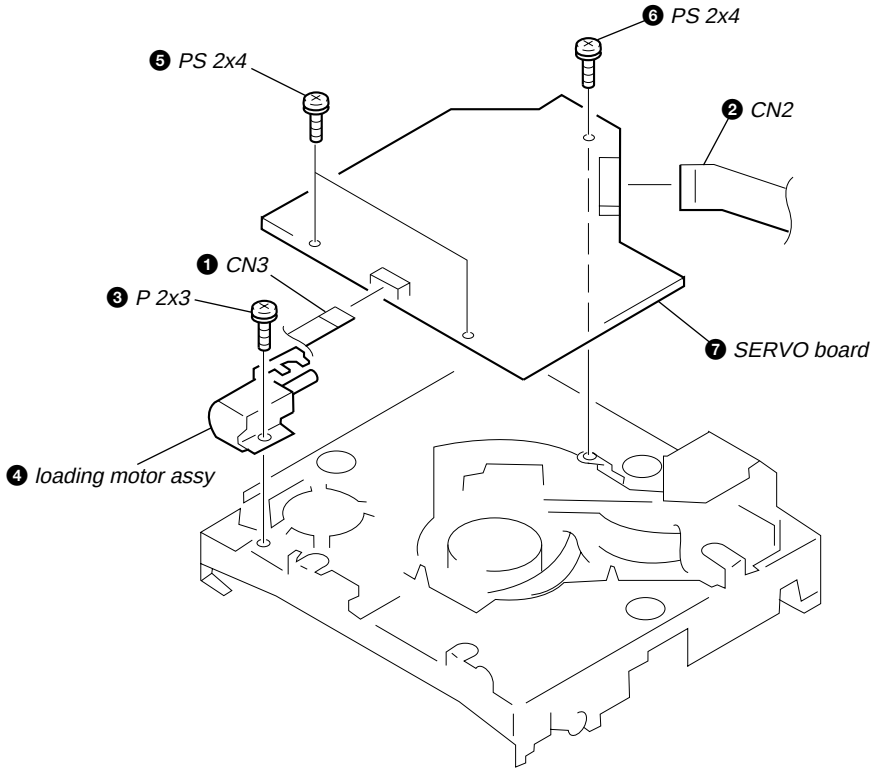
2-7. CHASSIS (T) SUB ASSY



2-8. LEVER ASSY



2-9. SERVO BOARD



2-10. ROLLER ASSY

• When installing, take note of the positions arm (roller) and washers. (Fig. 1)

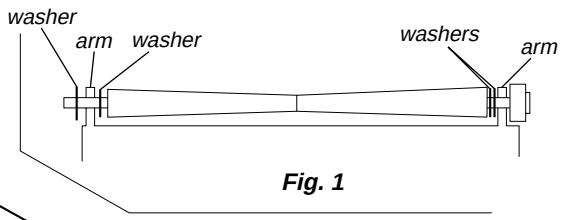
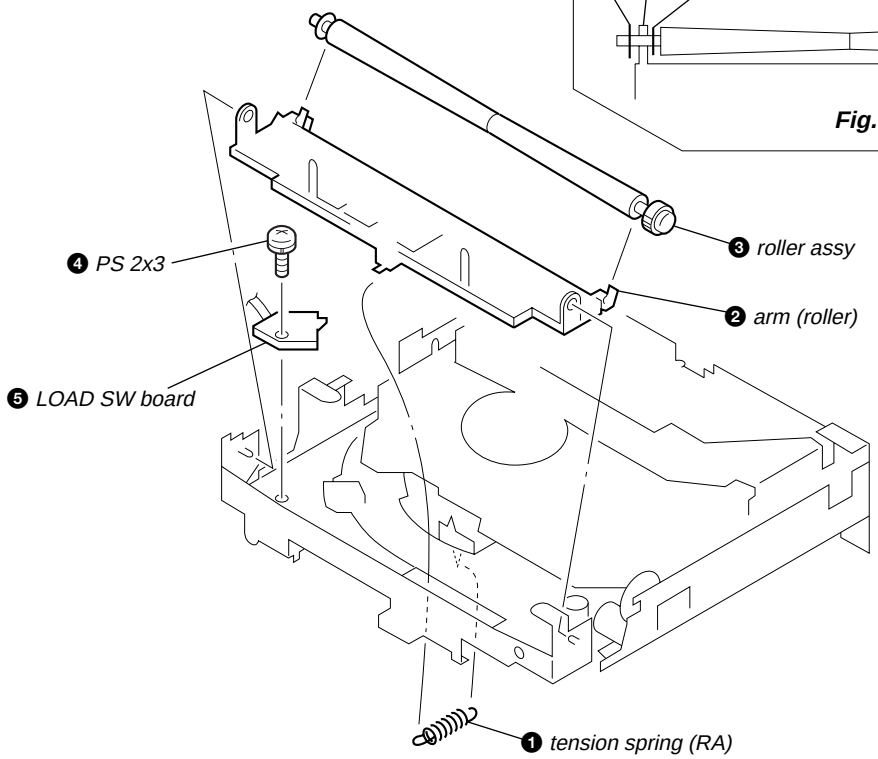
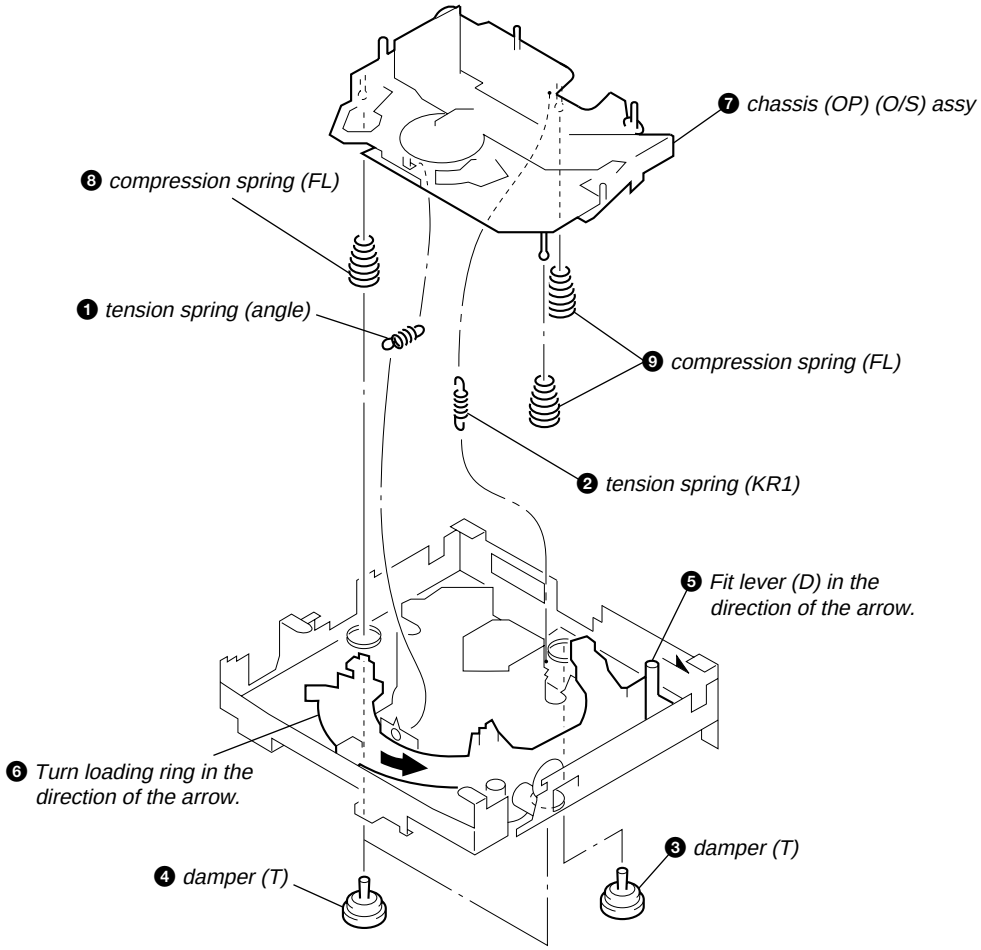


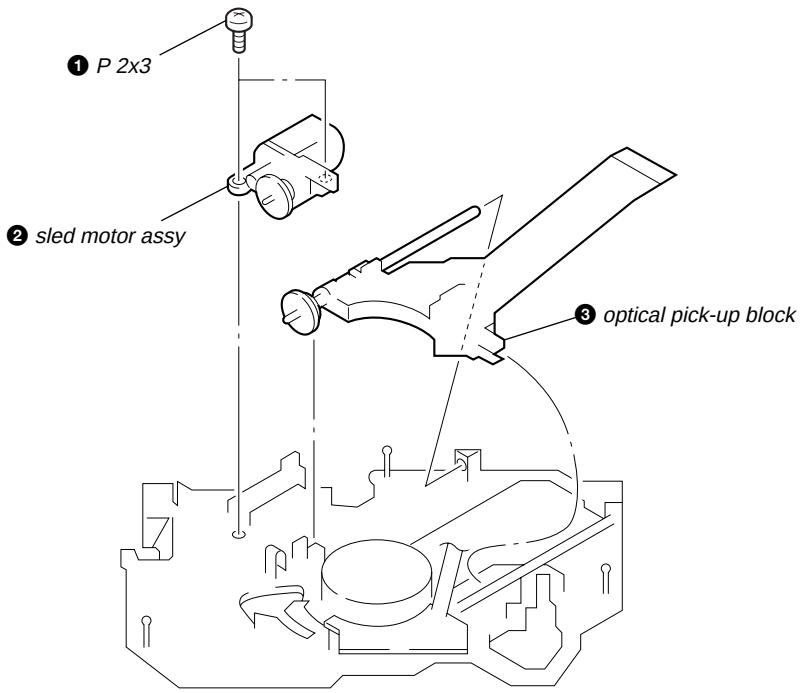
Fig. 1



2-11. CHASSIS (OP) (O/S) ASSY


❼ chassis (OP) (O/S) assy
❽ compression spring (FL)
❶ tension spring (angle)
❾ compression spring (FL)
❷ tension spring (KR1)
❺ Fit lever (D) in the direction of the arrow.
❻ Turn loading ring in the direction of the arrow.
❸ damper (T)
❹ damper (T)

2-12. OPTICAL PICK-UP BLOCK



SECTION 3
ELECTRICAL ADJUSTMENTS

TUNER SECTION **0 dB = 1 μV**

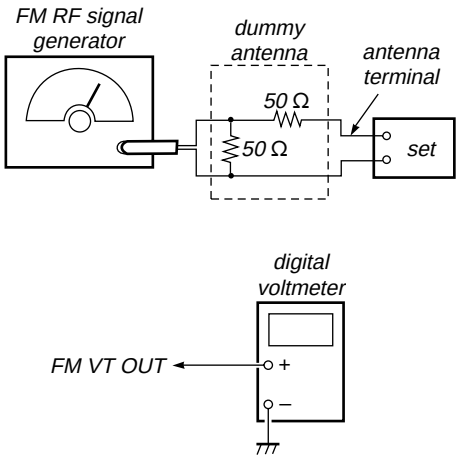
Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

FM VT Voltage Adjustment

Setting :

SOURCE button : FMI



Procedure :

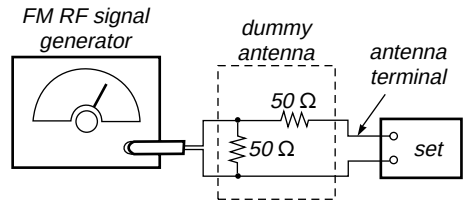
Adjust for following value reading on digital voltmeter.		
Frequency Display	87.5 MHz	107.9 MHz
Reading on Digital voltmeter	1.42 ± 0.05 V	7.2 ± 0.5 V
Adjustment Part	T4	(confirmation)

Adjustment Location : See page 17.

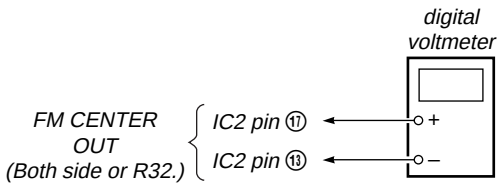
FM Center Adjustment

Setting :

SOURCE button : FMI

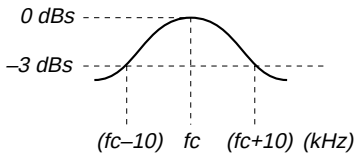


Carrier frequency : 97.9 MHz
Output level : 60 dB (1 mV)
Mode : mono
Modulation : 1 kHz, 75 kHz deviation (100 %)



Procedure :

1. Adjust T5 on TU1 so that the reading on the digital voltmeter becomes in 0 ± 50 mV.
2. Output an Fcenter 10 dB signal output from FM RF signal generator so that the LINE OUT REAR jack is –20 dBs.
3. Change the FM RF signal generator frequency and check the deviation of the frequency on + side and – side when the LINE OUT REAR jack drops 3 dB. (Both + side and – side is approx. 50 kHz.)
4. Re-adjust T5 on TU1 when the difference deviation of the frequency does more than 10 kHz.

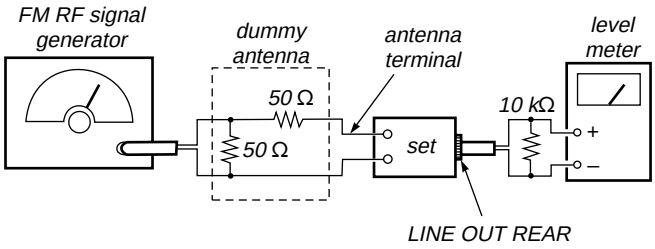


Adjustment Location : See page 17.

FM SENS/IF Adjustment

Setting :

SOURCE button : FMI



Procedure :

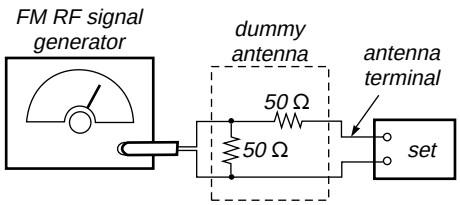
Adjust for a maximum reading on level meter.
T1–T3
87.5 MHz

Adjustment Location : See page 17.

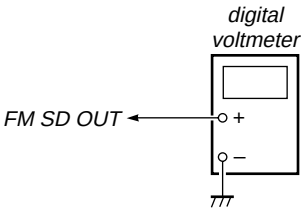
FM Auto Scan/Stop Level Adjustment

Setting :

SOURCE button : FMI



Carrier frequency : 97.9 MHz
Output level : 22 dB (12.6 µV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30 %)



Procedure :

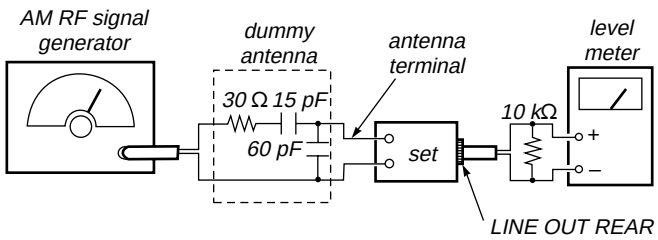
1. Adjust RV3 on TU1 so that the reading on the digital voltmeter changes point from minimum to maximum. (approx. 0.6 V)
2. Confirm that the set stops auto-scanning with FM RF signal generator output level set at 22 ± 2 dB.

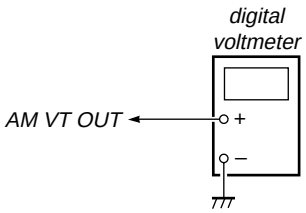
Adjustment Location : See page 17.

AM VT Voltage Adjustment

Setting :

SOURCE→MODE button : AM





Procedure :

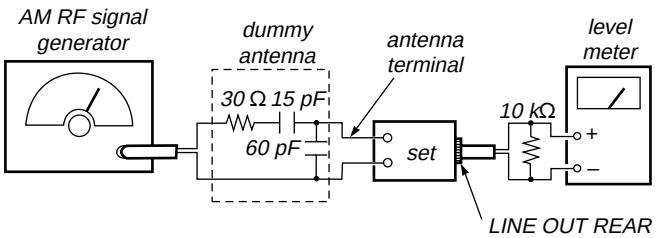
Adjust for following value reading on digital voltmeter.		
Frequency Display	530 kHz	1,710 kHz
Reading on Digital voltmeter	1.43 ± 0.05 V	6.8 ± 0.5 V
Adjustment Part	T9	(confirmation)

Adjustment Location : See page 17.

AM IF Adjustment

Setting :

SOURCE→MODE button : AM



Procedure :

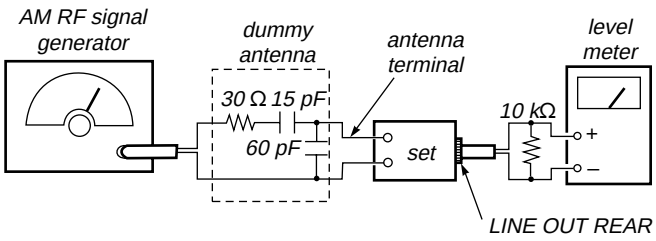
Adjust for a maximum reading on level meter.
T8
450 kHz

Adjustment Location : See page 17.

AM SENS Adjustment

Setting :

SOURCE→MODE button : AM



Procedure :

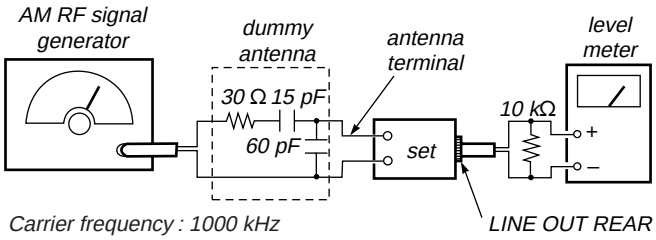
Adjust for a maximum reading on level meter.
T6, T7
530 kHz

Adjustment Location : See page 17.

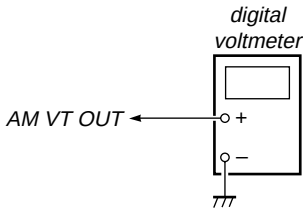
AM Auto Scan/Stop Level Adjustment

Setting :

SOURCE→MODE button : AM



Carrier frequency : 1000 kHz
30% amplitude
modulation by
400 Hz signal
output level : 30 dB (31.6 μV)



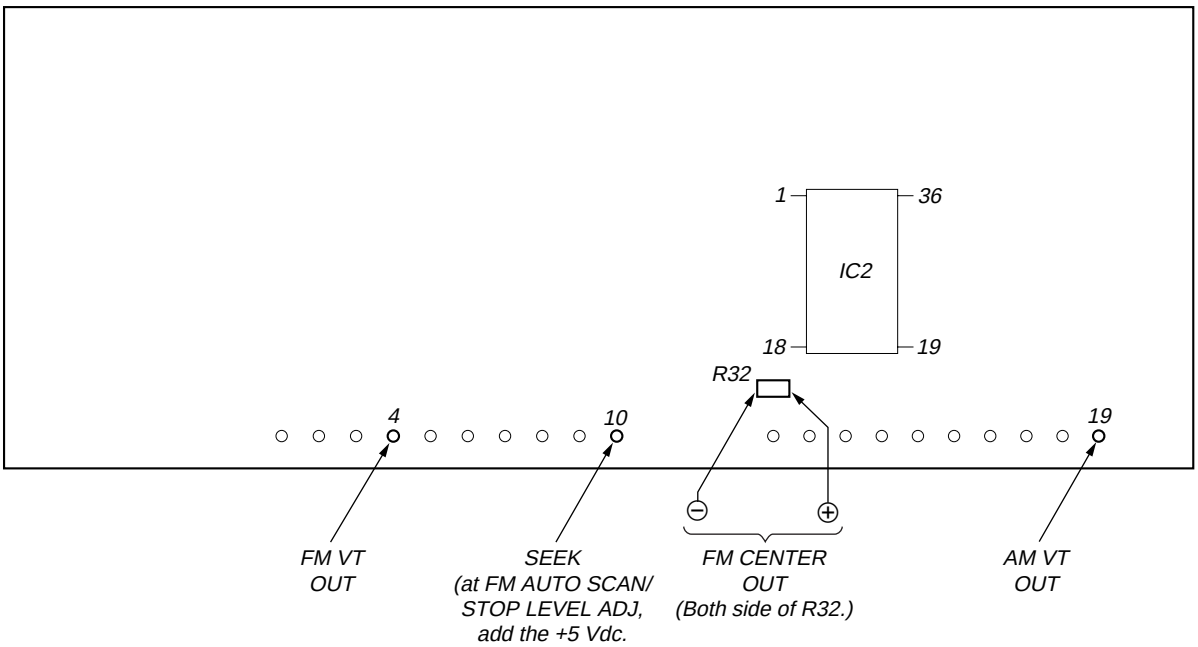
Procedure :

1. Adjust RV4 on TU1 so that the reading on the digital voltmeter changes point from minimum to maximum. (approx. 0.6 V)
2. Confirm that the set stops auto-scanning with AM RF signal generator output level set at 33 ± 4 dB.

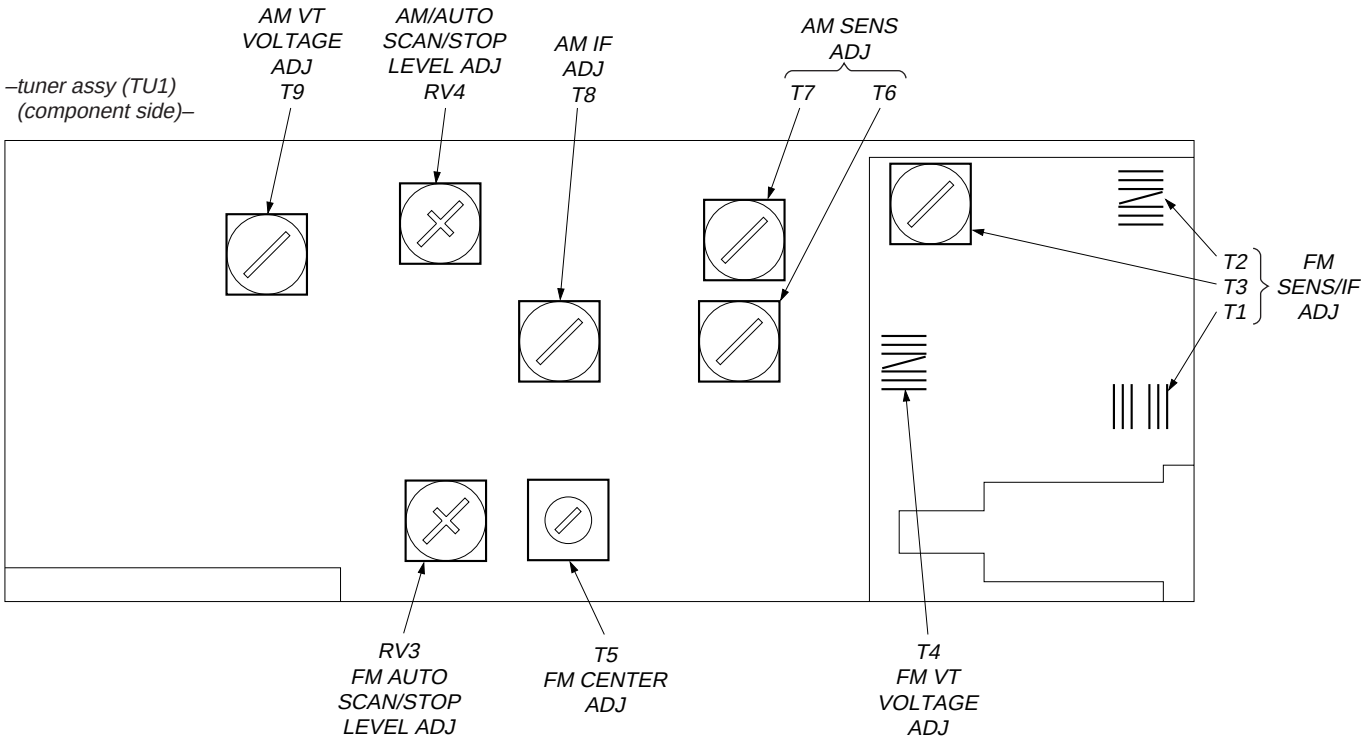
Adjustment Location : See page 17.

Adjustment Location : tuner assy (TU1)

–tuner assy (TU1) (conductor side)–



–tuner assy (TU1) (component side)–

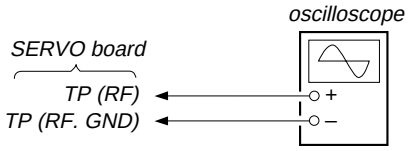


CD SECTION

Note:
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.
4. Clean an objective lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

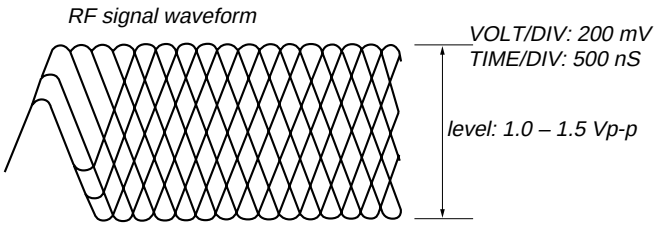
Focus Bias Adjustment

Setting: This adjustment is performed with the set placed horizontally.



Procedure:
1. Connect an oscilloscope between TP (RF) and TP (RF. GND) on the SERVO board.
2. Connect the power supply.
3. Push the RESET button (S900) on the MAIN board.
4. Insert the disc (YEDS-18) and playback.
5. Adjust RV1 so that the oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the sharp "≈ " can be clearly distinguished at the center of the waveform.



- When observing the eye pattern, set the oscilloscope to AC range and raise the vertical sensitivity so that it may be easily seen.

Adjustment Location: servo board

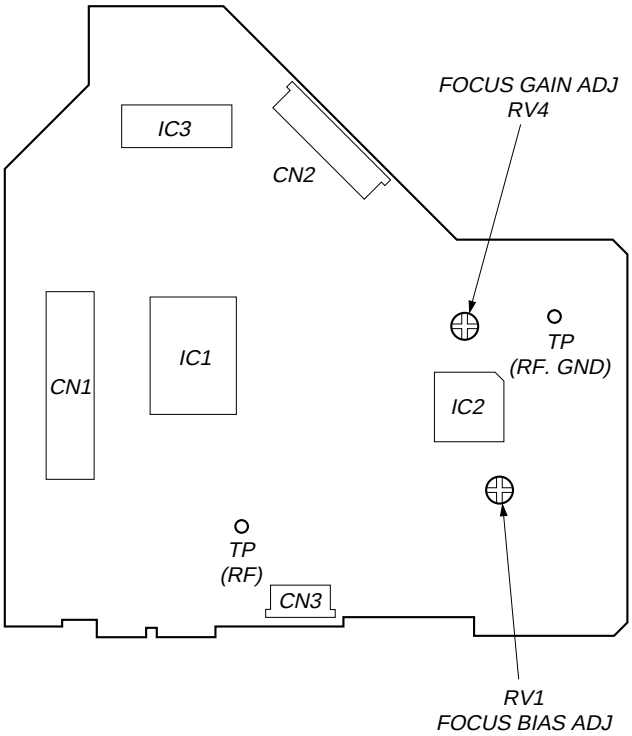
Focus Gain Adjustment (Coarse adjustment)

This adjustment is not required unless the following parts are replaced:
- Optical pick-up
- RV4

Procedure:
1. Set RV4 to the standard position. (mechanical center)
2. Check whether operation noise (while noise type) caused by the 2-axis device (lens section of the optical pick-up) is abnormally loud.
   If the operation noise is too loud, turn RV4 slightly counter-clockwise.
- If the gain is too low:
  Focus does not function and no music is selected.
- If the gain is too high:
  Noise caused by scratches and dust is heard and the operation becomes unstable.

Adjustment Location: servo board

Adjustment Location: servo board (component side)



SECTION 4
DIAGRAMS

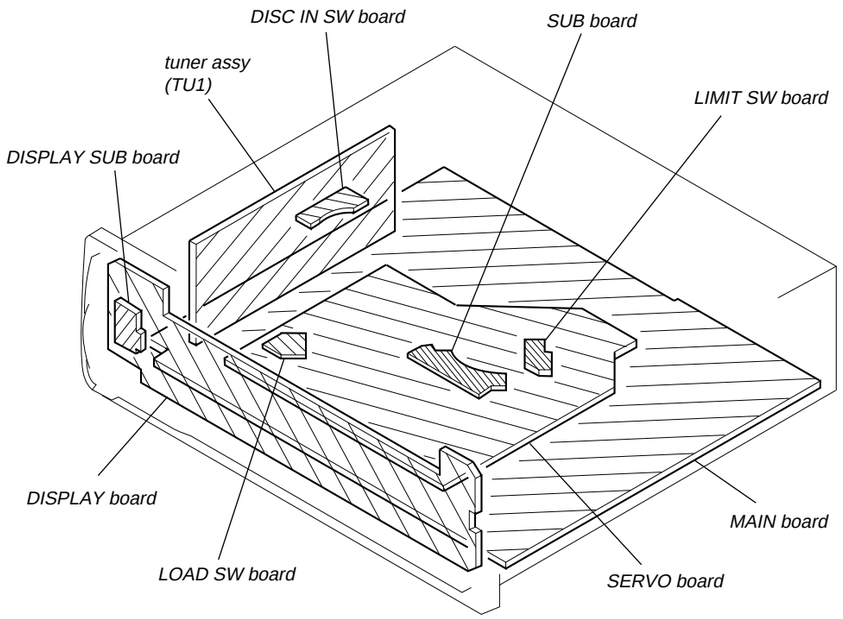
4-1. IC PIN DESCRIPTION

• IC800 μPD17017GF-B28-3B9 (SYSTEM CONTROL)

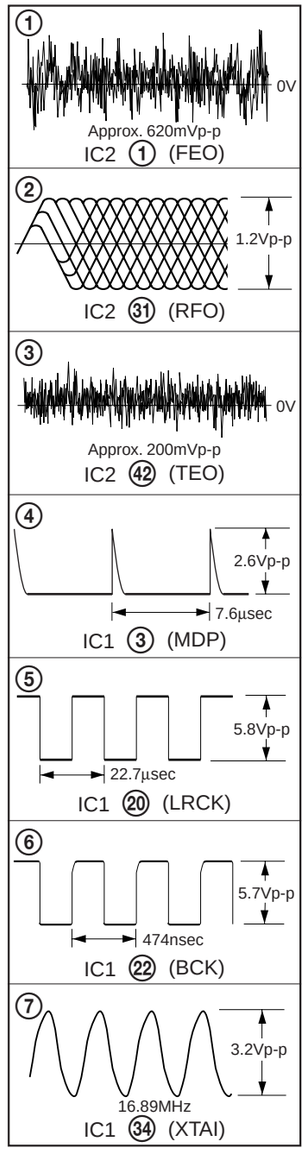
Pin No.	Pin Name	I/O	Pin Description
1	CD SO/VOL DATA	O	CD serial data/electric volume serial data output pin
2	VOL CLK	O	Electric volume serial clock output pin
3	SENSE	I	CD sens signal input pin
4	$\overline{ST}$/MONO	O	FM/AM select pin
5	$\overline{ACC}$	I	Accessory power (ACC) voltage detection pin
6	FOK	I	Focus OK signal input pin
7	CD-LAT	O	CD latch signal output pin
8	SQCKO	O	Sub code Q data read clock output pin
9	CD RST	O	CD reset signal output pin
10	SQ SI	I	Sub code Q data input pin
11	NC	—	Not used. (Connect to GND.)
12	SCOR	I	Sub code sync detection signal input pin
13	BUIN	I	Power for operation (BATT) voltage detection pin
14	CDMON	O	Mechanism deck section power supply control pin
15	ILL ON	O	Illumination power supply control pin
16	$\overline{LD\ ON}$	O	Laser power ON/OFF control pin
17	FM/$\overline{AM}$	O	FM/AM select pin
18	SEEKOUT	O	SEEK OUT signal output pin
19	PW-ON	O	System power supply control pin
20	LCL/$\overline{DX}$	O	LOCAL/DX select pin
21	BEEP	O	Beep sound output pin
22	VOL CE	O	Electric volume serial chip enable output pin
23	LM EJ	O	Loading motor control pin (Eject direction)
24	LM LOD	O	Loading motor control pin (Loading direction)
25	MUTE	O	Audio mute signal output pin
26	FM IF	I	FM IF counter input pin (Not used in this set.)
27	AM IF	I	AM IF counter input pin
28	$\overline{NOSE\ SW}$	I	Front panel with/without detection input pin
29	SD/ST	I	During SEEK operation, station detection input pin.
30	VDD1	—	Power supply pin
31	VCOL	I	AM OSC signal input pin
32	VCOH	I	FM OSC signal input pin
33	GND	—	GND
34	XOUT	O	System clock output pin (4.5 MHz)
35	XIN	I	System clock input pin (4.5 MHz)
36	EO0	O	Charge pump output pin
37	EO1	—	Not used.
38	NC	—	Not used. (Fixed at “L”.)
39, 40	NC	—	Not used.
41	VDD2	—	Power supply pin
42	EMPH.O	O	De-emphasis control pin
43, 44	COM1, COM0	O	Not used.
45	LCDSO	O	LCD serial data output pin
46	LCDCKO	O	LCD serial clock output pin
47	LCDINH	O	LCD blank display control output pin
48	LCDCE	O	LCD chip enable output pin
49 – 64	LCD25 – LCD10	O	Not used.
65	TEST SW	I/O	Test mode direct settig input
66	BAND SW	I/O	Not used.
67	AREA2 SW	O	Not used.
68	AREA1 SW	I/O	Not used.

Pin No.	Pin Name	I/O	Pin Description
69	SK IN	I	Not used.
70	DK IN	I	Not used.
71	SELF SW	I/O	SELF SW input/LCD segment signal output pin
72	IN SW	I/O	DISC IN SW input/LCD segment signal output pin
73	L SW	I/O	LIMIT SW input/LCD segment signal output pin
74	D SW	I/O	DOWN SW input/LCD segment signal output pin
75	KEY-RETURN	I	Key return signal input pin
76 – 78	AD2 – AD0	I	Key input pin (A/D input)
79	AMP MUTE	O	Power amplifier mute signal output pin
80	CD CKO	O	CD serial clock output pin

4-2. CIRCUIT BOARDS LOCATION



• **Waveforms** (MODE:PLAY)



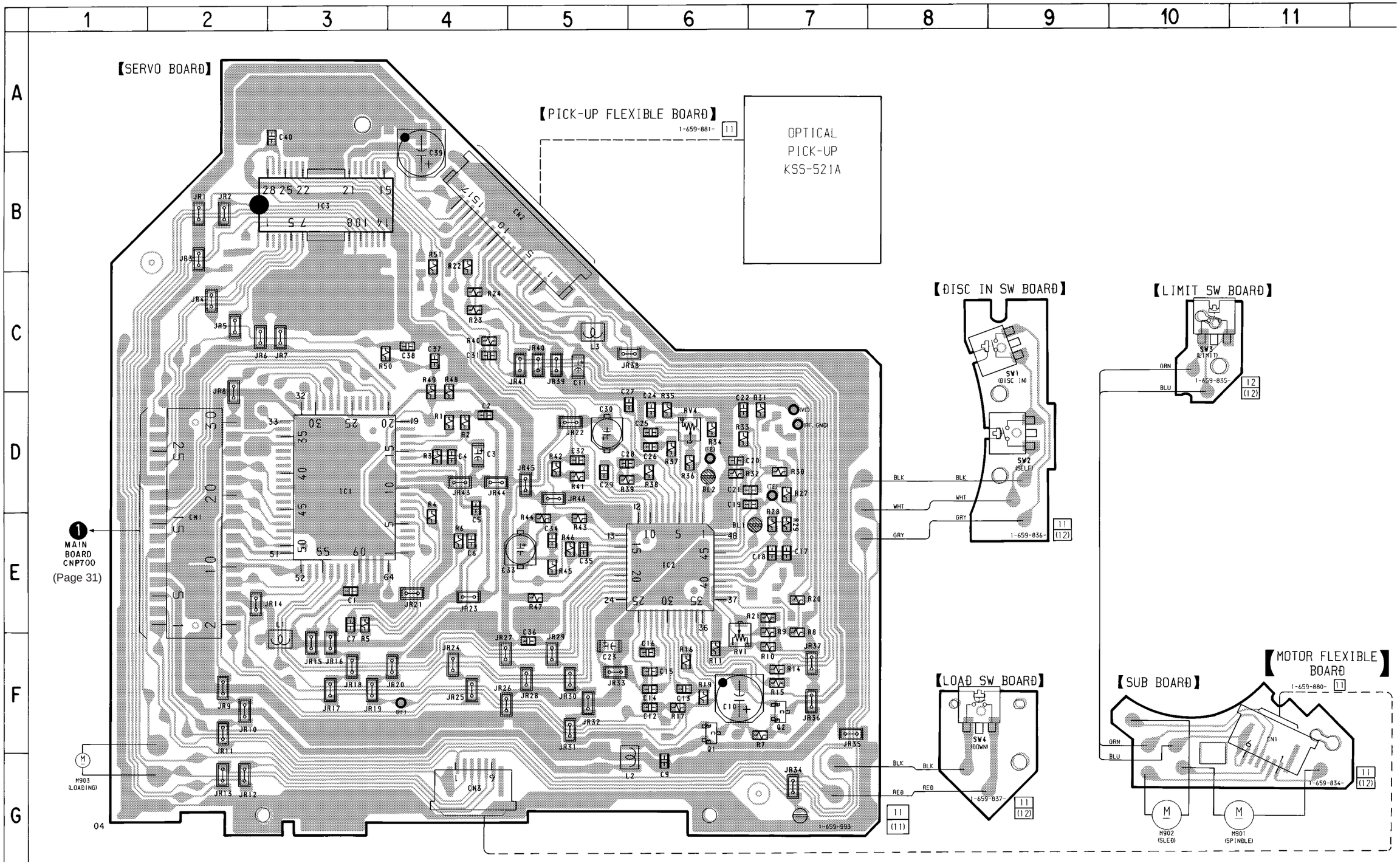
Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

4-3. PRINTED WIRING BOARDS — CD MECHANISM SECTION —



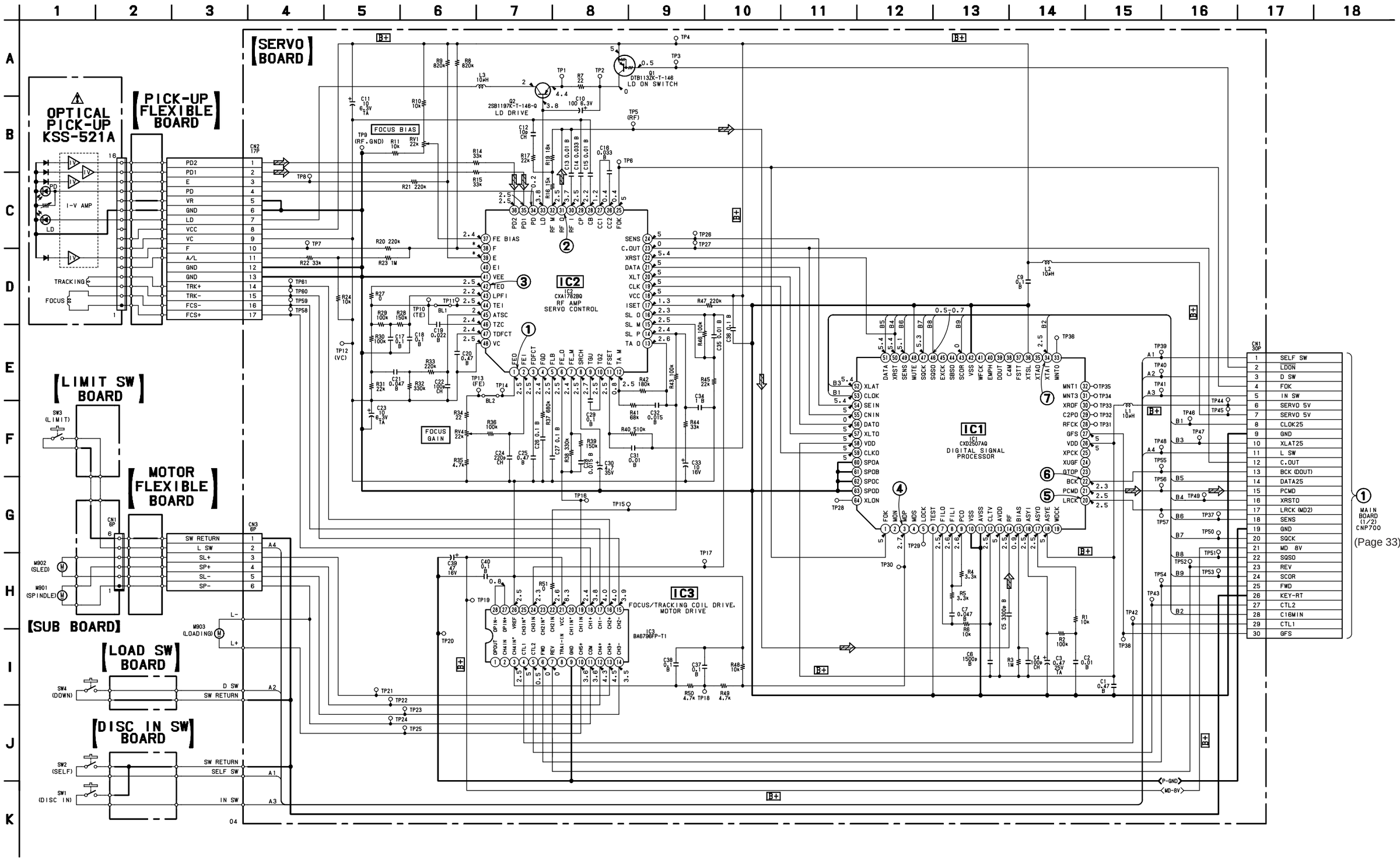
• Semiconductor Location

Ref. No.	Location
IC1	D-3
IC2	E-6
IC3	B-3
Q1	F-6
Q2	F-7

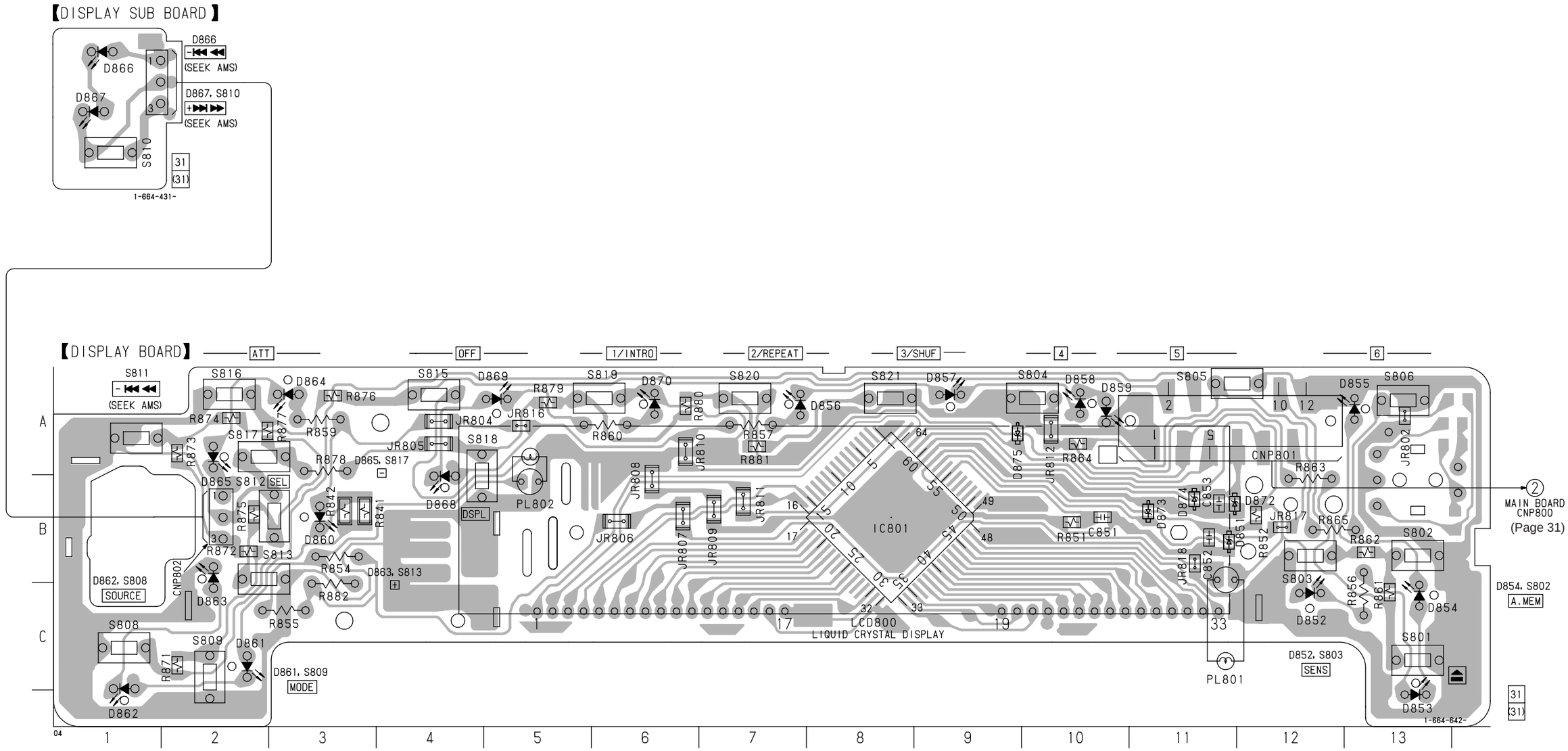
Note:

- ——— : parts extracted from the conductor side.
- ▒▒▒ : Pattern from the side which enables seeing.

4-4. SCHEMATIC DIAGRAM — CD MECHANISM SECTION — • Refer to page 22 for Waveforms and Note and page 37 for IC Block Diagrams.



4-5. PRINTED WIRING BOARDS — DISPLAY SECTION —

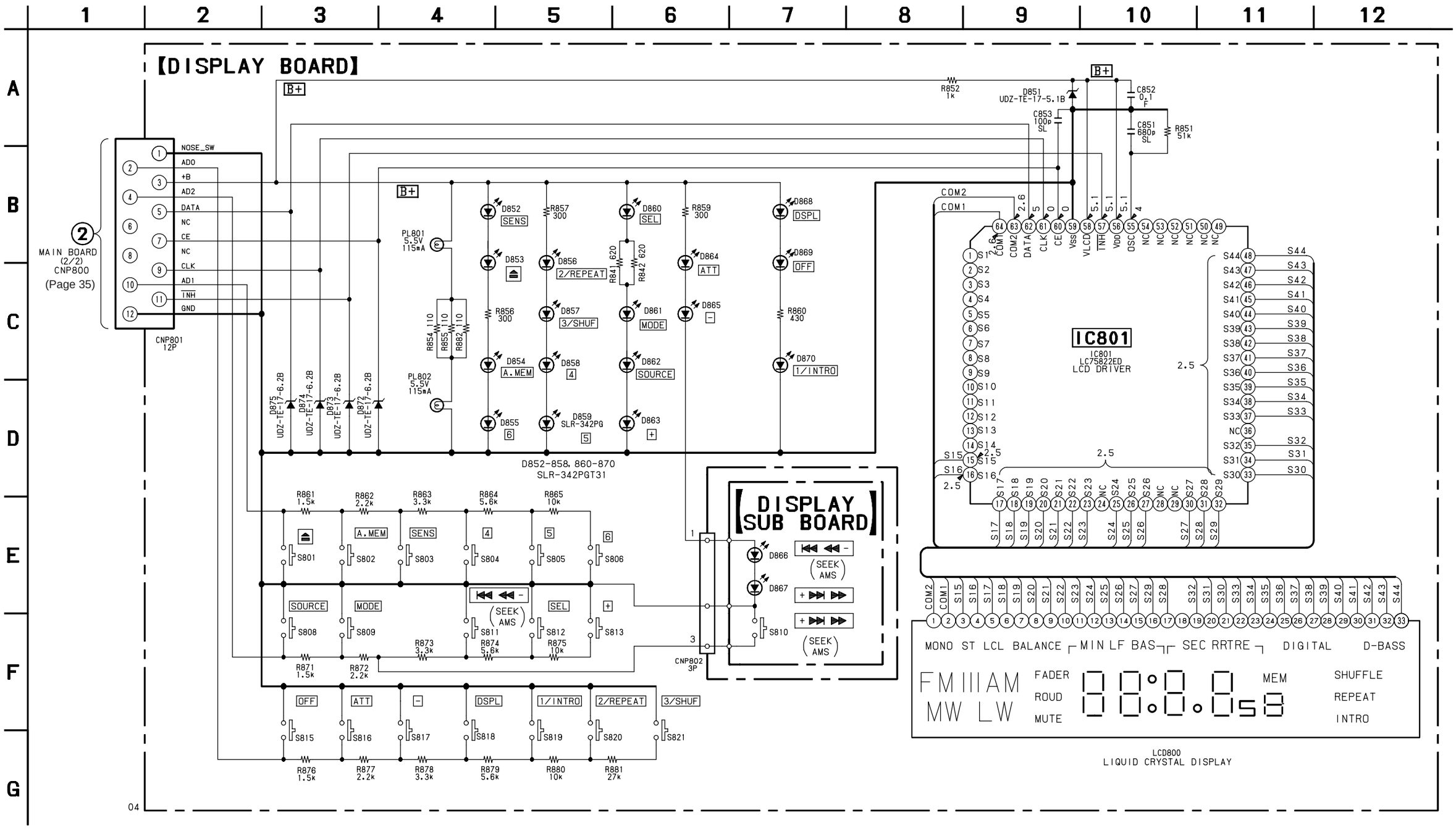


• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D851	B-12	D863	C-2
D852	C-12	D864	A-3
D853	C-13	D865	B-2
D854	C-13	D868	B-4
D855	A-13	D869	A-5
D856	A-8	D870	A-6
D857	A-9	D872	B-12
D858	A-10	D873	B-11
D859	A-10	D874	B-11
D860	B-3	D875	B-9
D861	C-2		
D862	C-1	IC801	B-8

Note:
- ○—— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.

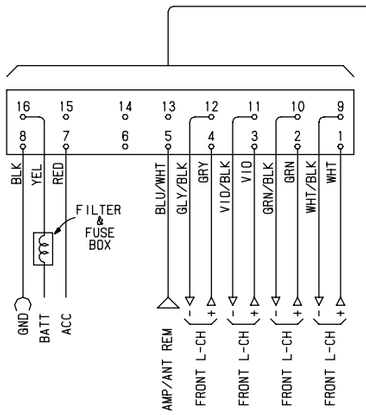
4-6. SCHEMATIC DIAGRAM — DISPLAY SECTION —



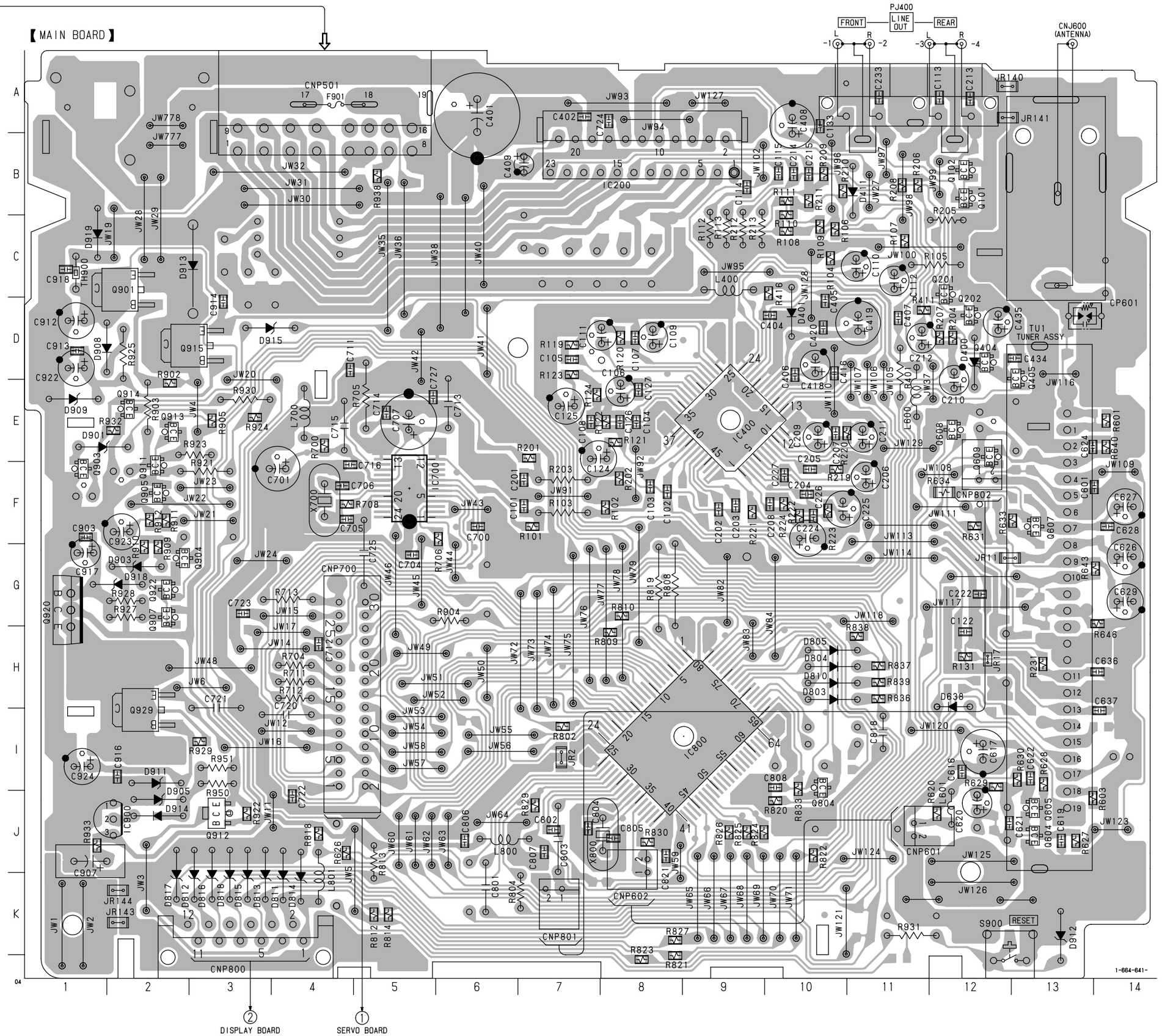
Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- ▭ : panel designation.
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

4-7. PRINTED WIRING BOARD — MAIN SECTION —


16 15 14 13 12 11 10 9
8 7 6 5 4 3 2 1
BLK YEL RED BLU/WHT GLY/BLK GRY VIO/BLK VIO GRN/BLK GRN WHT/BLK WHT
FILTER & FUSE BOX
GND BATT ACC AMP/ANT REM FRONT L-CH FRONT L-CH FRONT L-CH FRONT L-CH FRONT L-CH

【MAIN BOARD】



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D400	D-12	IC400	E-9
D401	D-10	IC700	F-5
D411	B-11	IC800	I-9
D638	H-12	IC900	J-2
D803	H-10		
D804	H-10	Q101	B-12
D805	H-10	Q102	B-12
D810	H-10	Q201	C-12
D811	K-4	Q202	D-12
D812	K-2	Q404	D-12
D813	K-3	Q405	E-13
D814	K-4	Q604	J-13
D815	K-3	Q605	J-13
D816	K-3	Q607	F-13
D817	K-2	Q608	E-12
D818	K-3	Q609	F-12
D901	E-1	Q804	J-10
D903	G-2	Q901	C-2
D905	J-2	Q903	F-1
D908	D-1	Q904	G-3
D909	E-1	Q905	F-2
D911	I-2	Q907	G-2
D912	K-13	Q911	F-2
D913	C-2	Q912	J-3
D914	J-2	Q913	E-2
D915	D-3	Q914	E-2
D918	G-2	Q915	D-2
D919	C-1	Q920	G-1
		Q922	G-2
IC200	B-8	Q929	I-2

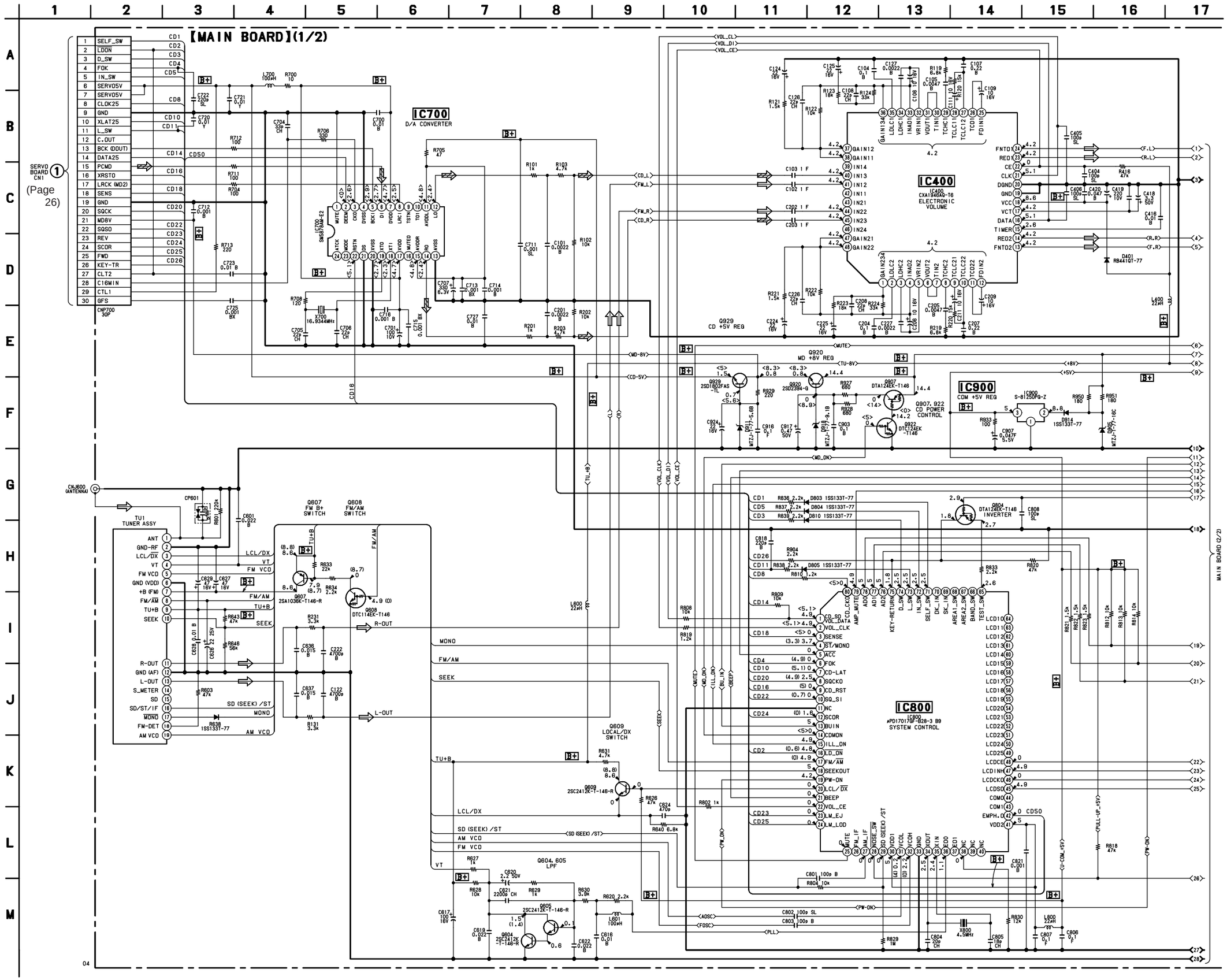
Note:

- ○——— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

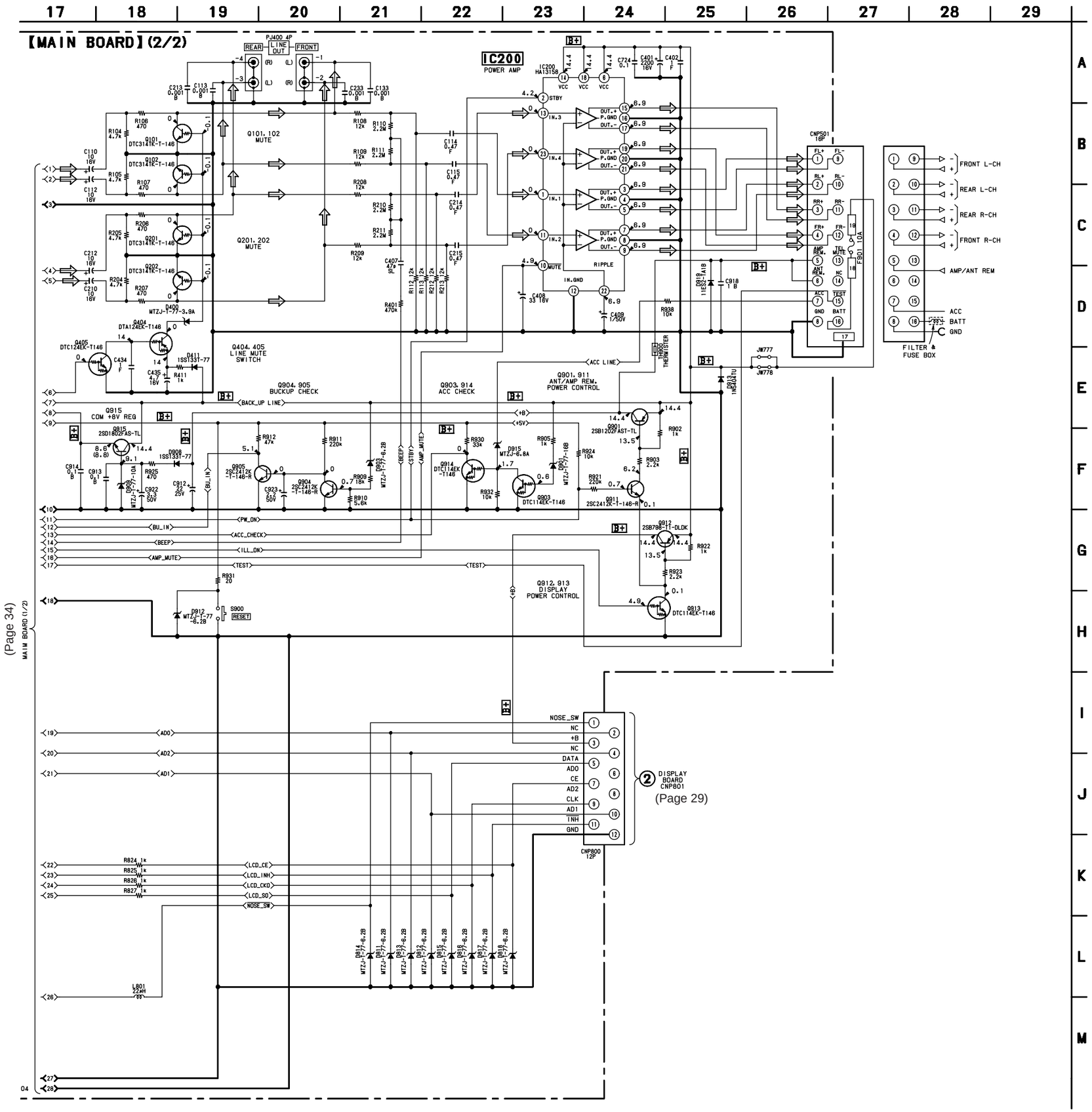
② DISPLAY BOARD CNP801 (Page 28)

① SERVO BOARD CN1 (Page 23)

4-8. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — • Refer to page 36 for Note and page 39 for IC Block Diagrams.



4-9. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) —

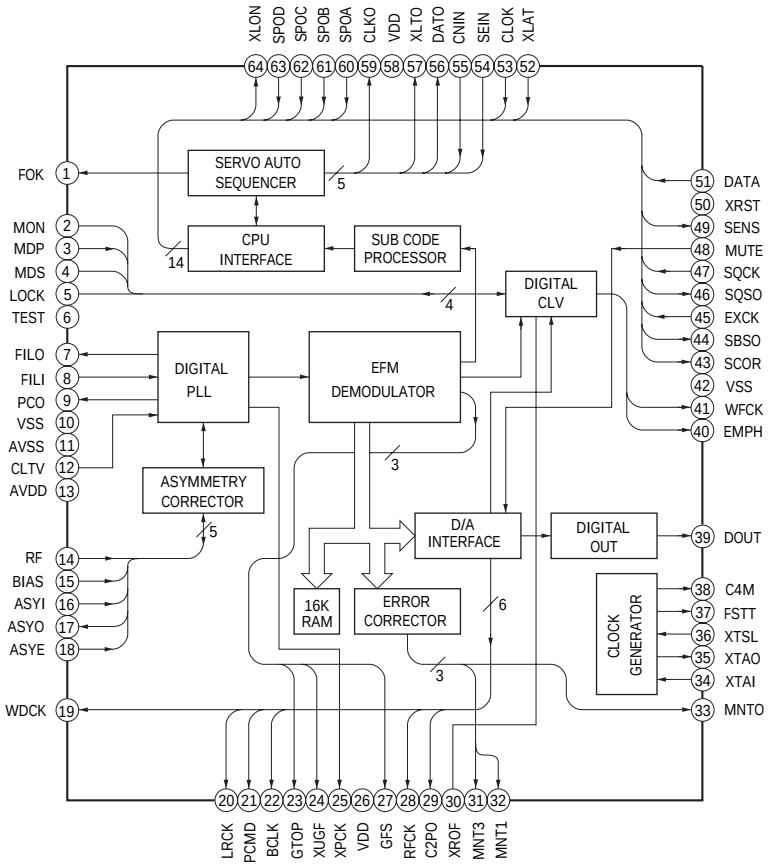


Note:

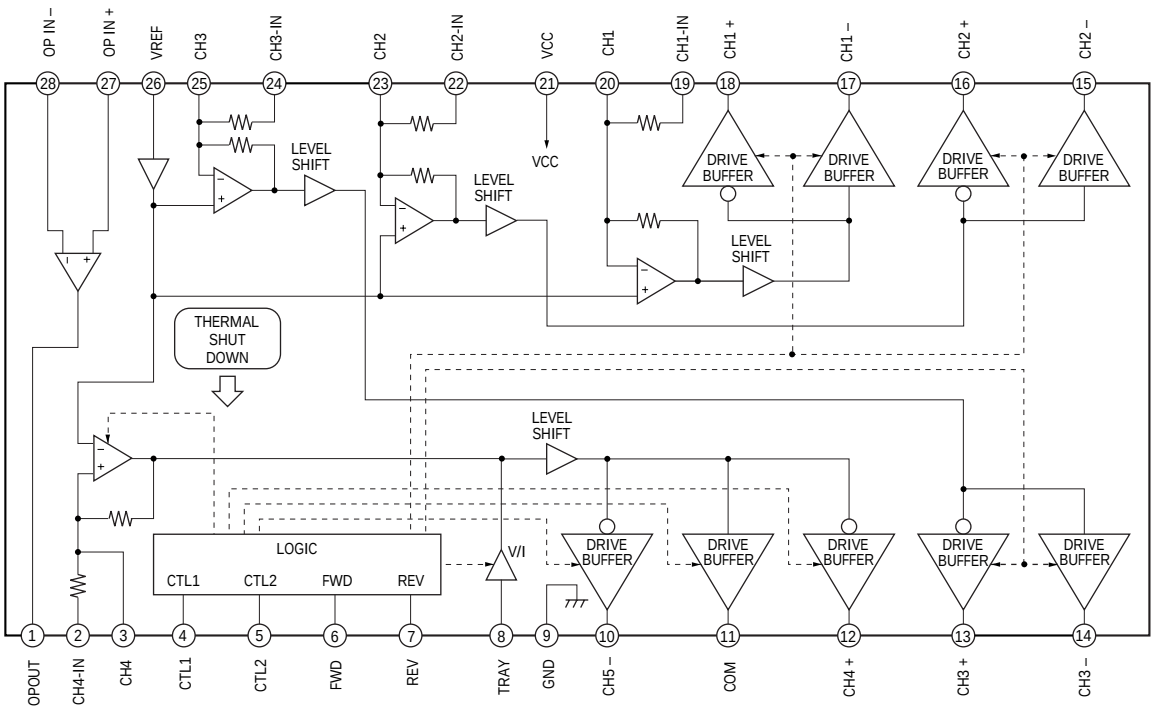
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : AM
  < > : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM/AM
  ⇨ : CD

• **IC Block Diagrams**

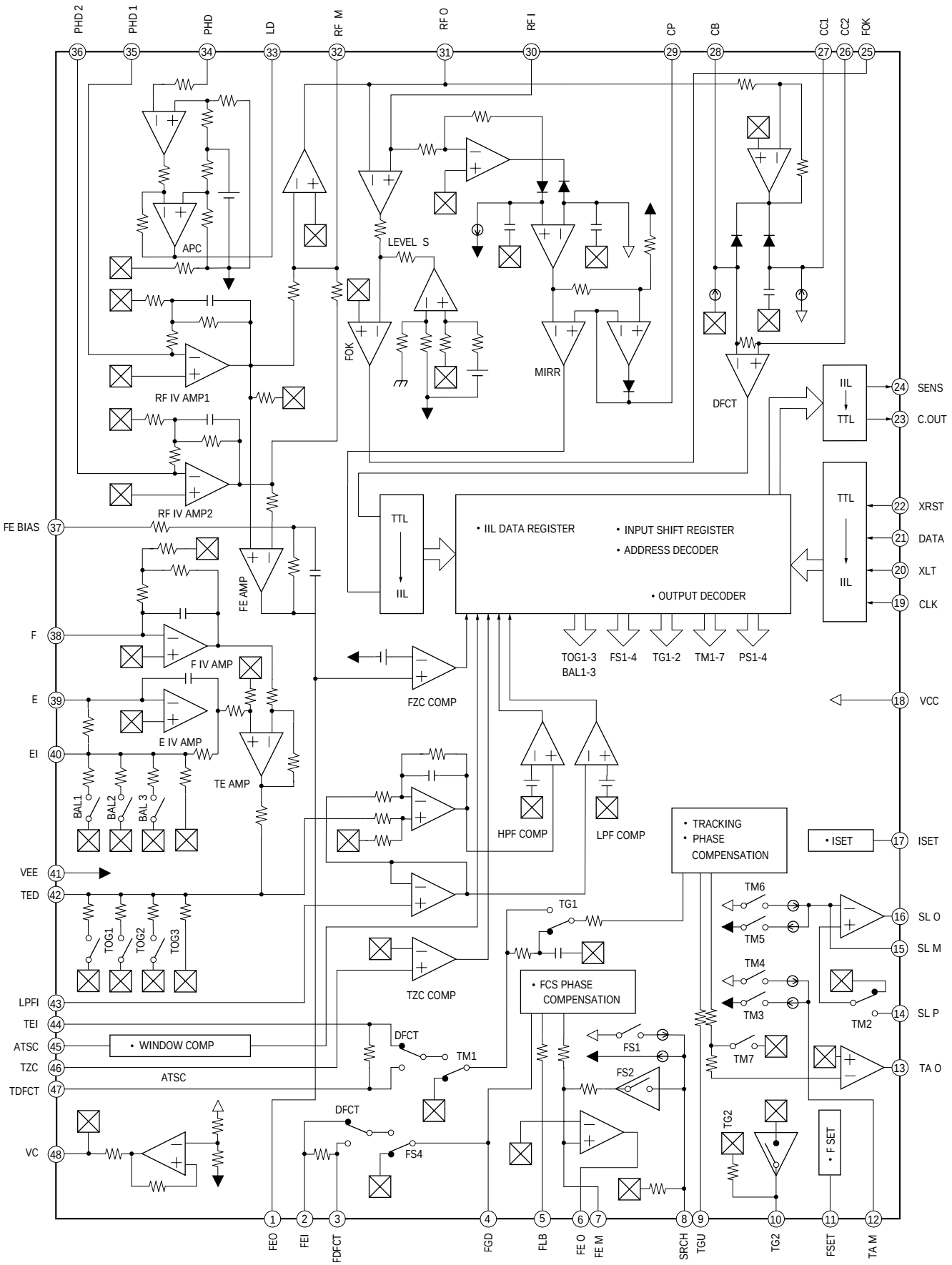
IC1 CXD2507AQ



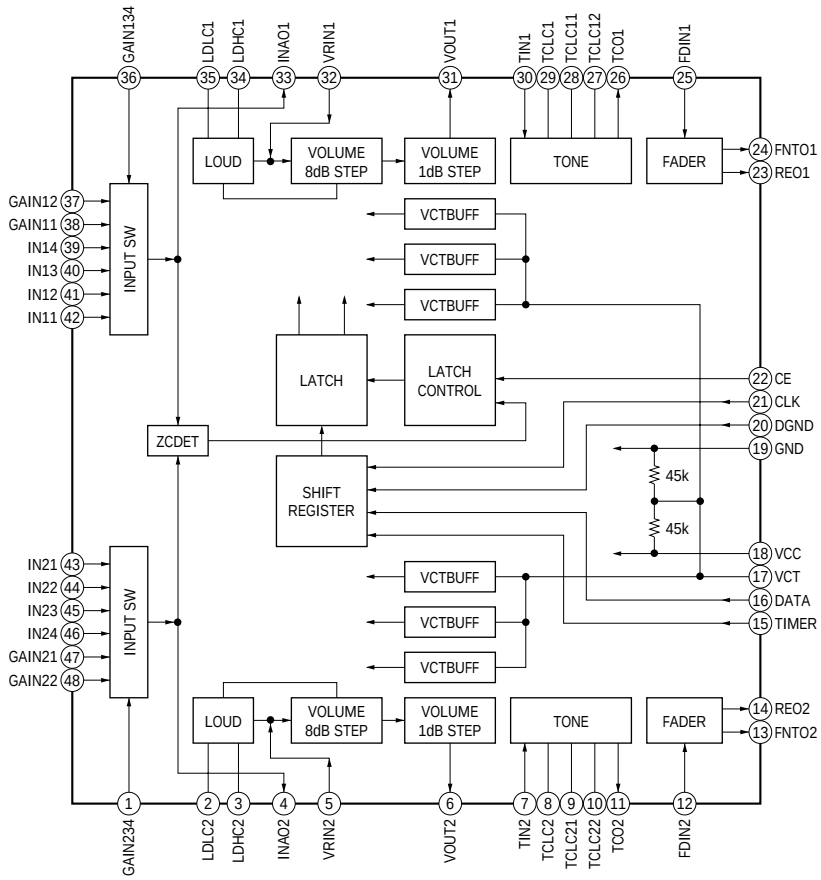
IC3 BA6796FP-T1


OP IN – OP IN + VREF CH3 CH3-IN CH2 CH2-IN VCC CH1 CH1-IN CH1 + CH1 – CH2 + CH2 –
28 27 26 25 24 23 22 21 20 19 18 17 16 15
LEVEL SHIFT
VCC
DRIVE BUFFER
THERMAL SHUT DOWN
LOGIC
CTL1 CTL2 FWD REV
V/I
1 2 3 4 5 6 7 8 9 10 11 12 13 14
OPOUT CH4-IN CH4 CTL1 CTL2 FWD REV TRAY GND CH5 – COM CH4 + CH3 + CH3 –

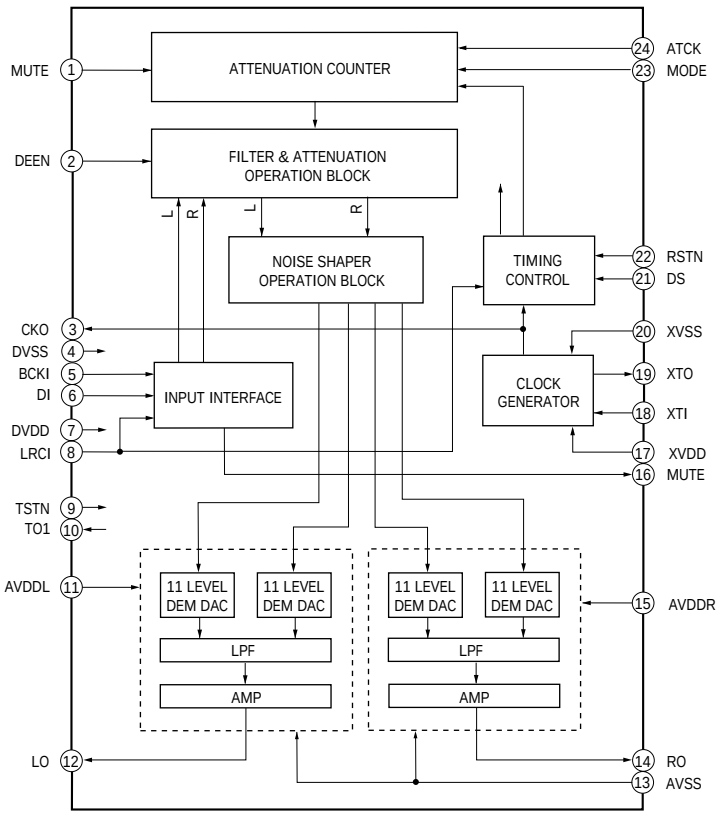
IC2 CXA1782BQ



IC400 CXA1946AQ-T6



IC700 SM5878AM-E2

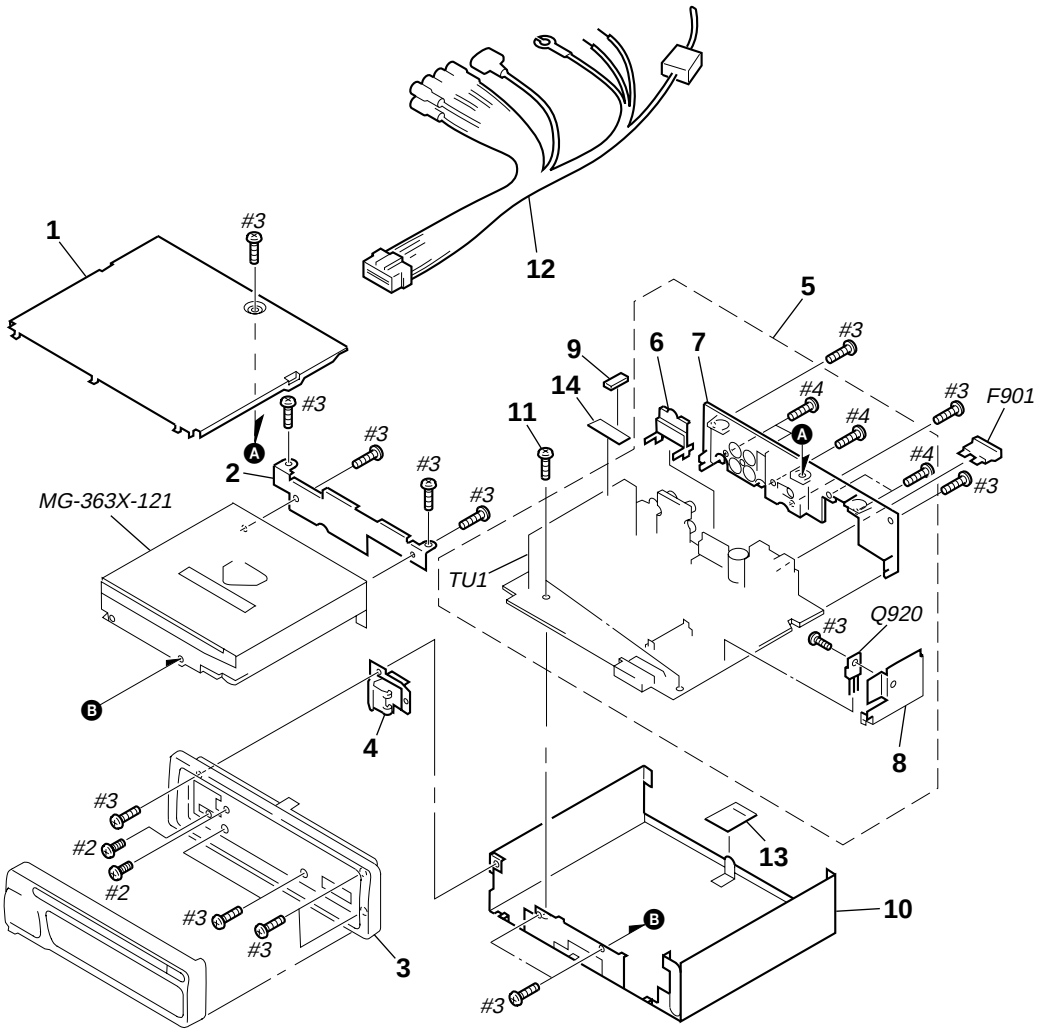


SECTION 5
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

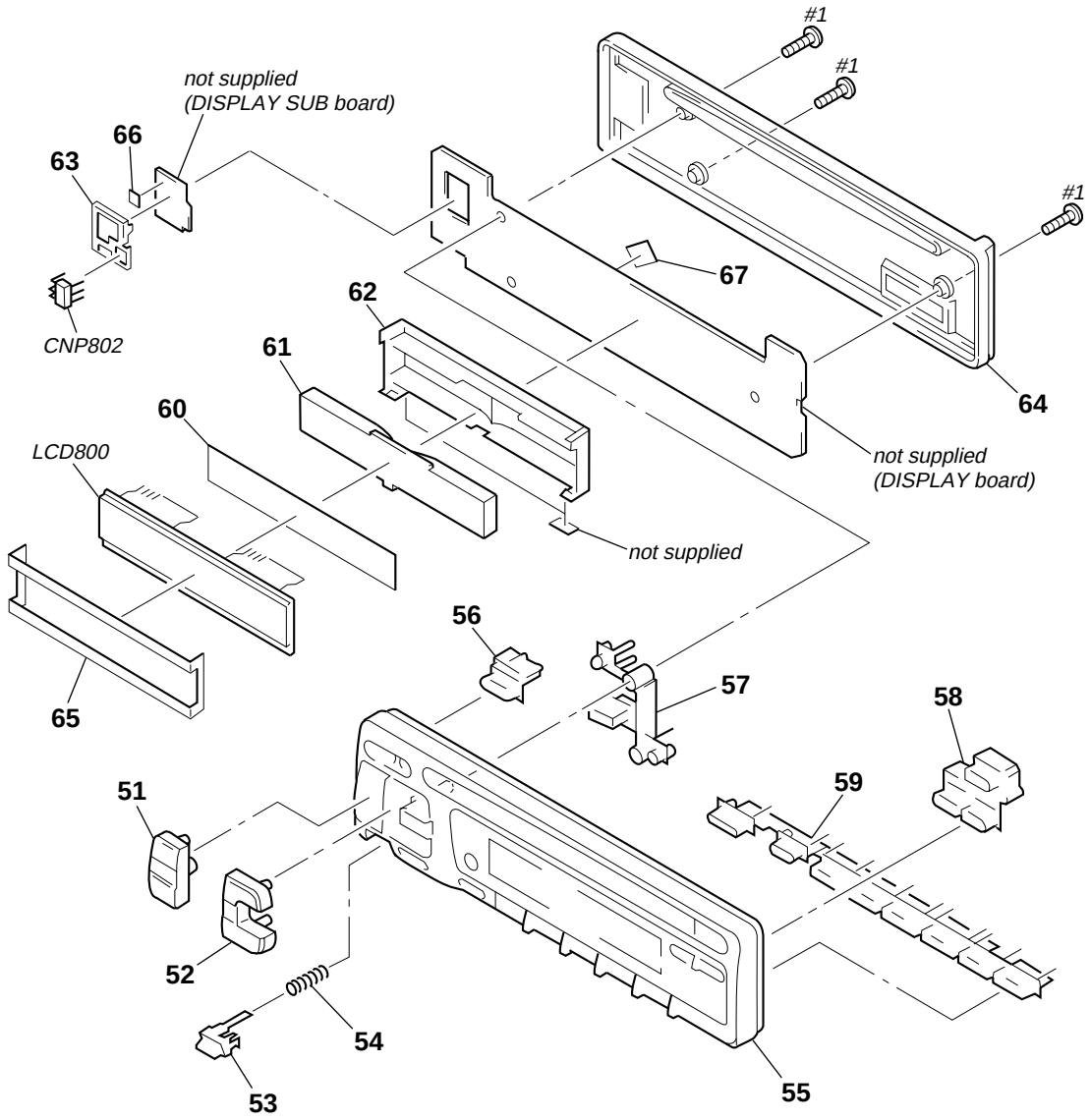
The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

5-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	X-3372-357-1	COVER ASSY	
* 2	3-009-349-01	BRACKET (M/D)	
3	X-3373-956-2	PANEL (1) ASSY, SUB	
4	X-3368-104-2	LOCK ASSY	
* 5	A-3294-426-A	MAIN BOARD, COMPLETE	
* 6	3-931-260-01	BRACKET (IC)	
* 7	3-009-353-11	HEAT SINK	
* 8	3-920-529-01	BRACKET (REG)	
* 9	3-916-236-01	CUSHION	
* 10	3-009-348-01	CHASSIS (MAIN)	
11	3-922-535-11	SCREW (+BTT)	
12	1-769-786-91	CORD (WITH CONNECTOR) (POWER)	
* 13	3-013-861-01	SHEET (INSULATING A)	
14	3-011-878-01	TAPE (EMC)	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
Q920	8-729-019-00	TRANSISTOR 2SD2394-G	
TU1	A-3309-805-A	TUNER ASSY	

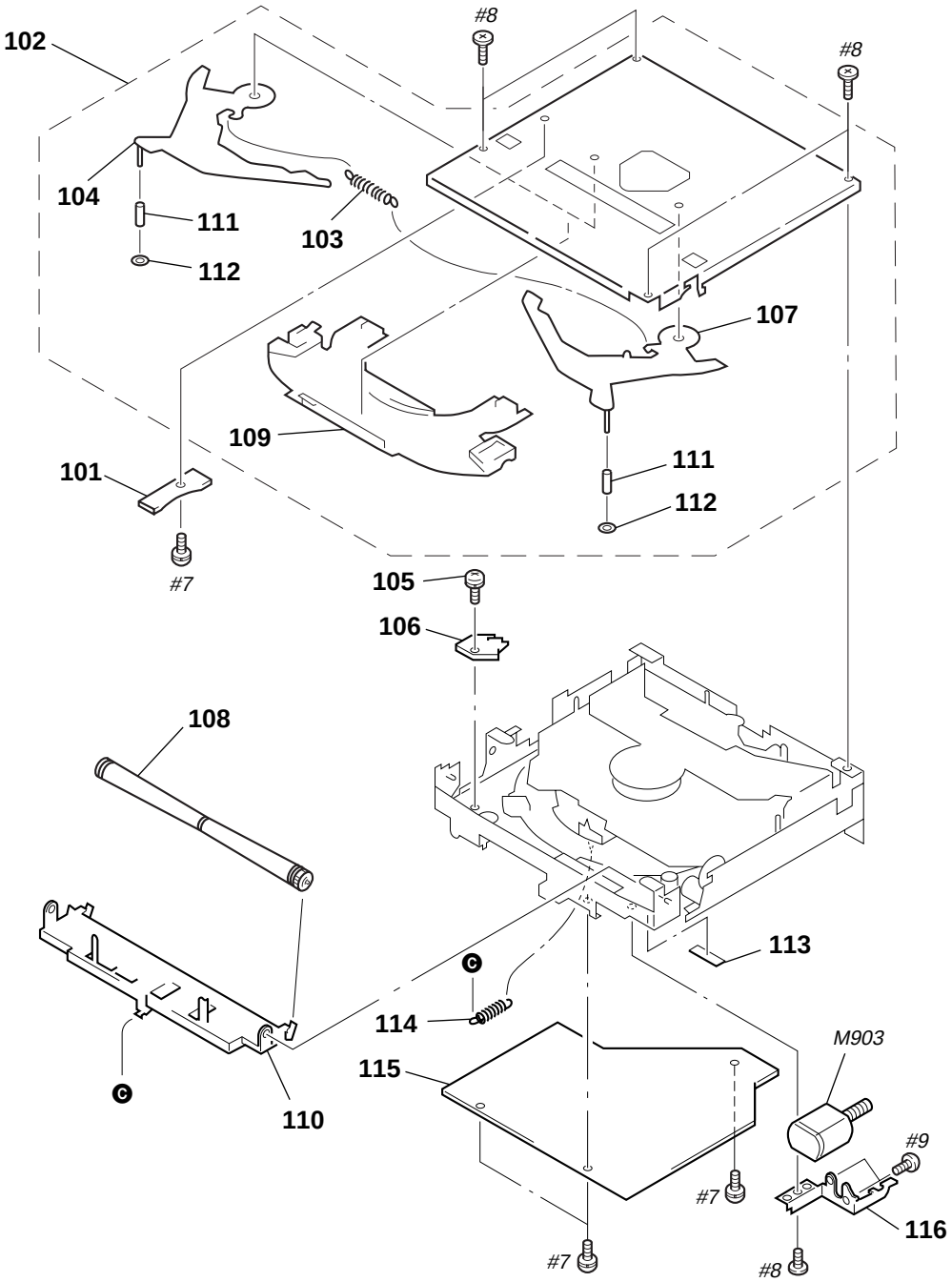
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-009-376-01	BUTTON (SEEK/AMS)	
52	3-009-332-01	BUTTON (+/-)	
53	3-009-329-01	BUTTON (RELEASE)	
54	3-013-634-01	SPRING (RELEASE)	
55	X-3375-537-1	PANEL SUB ASSY, FRONT	
56	3-009-334-01	BUTTON (SOURCE)	
57	3-009-333-01	BUTTON (DSPL)	
58	3-009-331-01	BUTTON (EJECT CD)	
59	3-009-330-11	BUTTON (1-6)	
* 60	3-009-341-01	SHEET (LCD)	

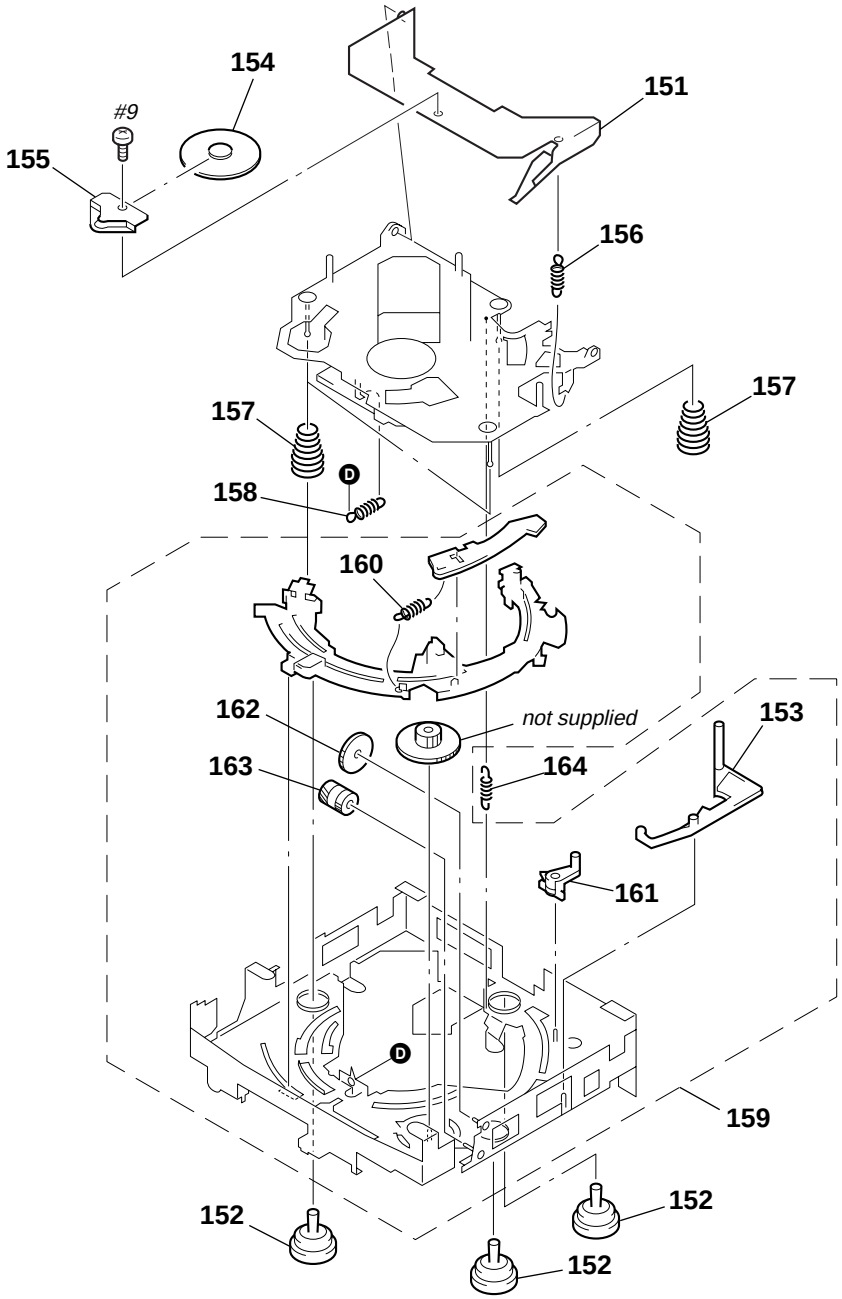
Ref. No.	Part No.	Description	Remark
* 61	3-009-335-02	PLATE (LCD), LIGHT GUIDE	
* 62	3-009-337-01	HOLDER (LCD)	
* 63	3-009-371-01	BRACKET (PCB)	
64	3-009-355-01	PANEL, FRONT BACK	
* 65	3-014-202-01	BRACKET (LCD)	
66	3-925-745-01	CUSHION	
67	3-848-222-01	CUSHION	
CNP802	1-779-129-11	PIN, CONNECTOR 3P	
LCD800	1-803-140-11	DISPLAY PANEL, LIQUID CRYSTAL	

5-3. CD MECHANISM SECTION (1)
(MG-363X-121)



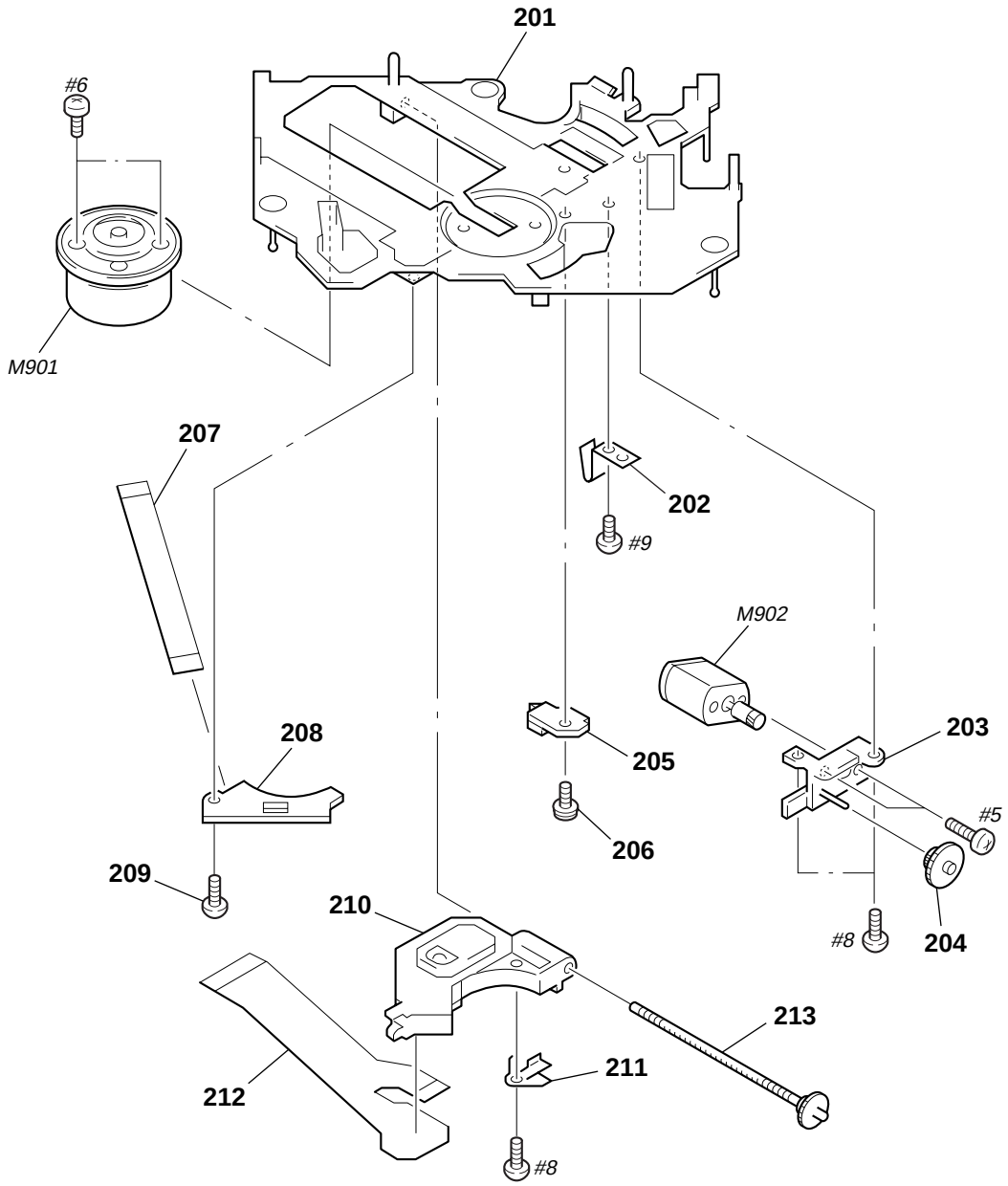
Ref. No.	Part No.	Description	Remark
* 101	1-659-836-11	DISC IN SW BOARD	
* 102	A-3291-816-B	CHASSIS (T) SUB ASSY	
103	3-931-909-01	SPRING (LR), TENSION	
104	X-3371-501-1	LEVER (L) ASSY	
105	3-338-737-01	SCREW (2X3), + PS	
* 106	1-659-837-11	LOAD SW BOARD	
107	X-3371-502-1	LEVER (R) ASSY	
108	A-3301-203-A	ROLLER ASSY	
109	3-931-908-01	GUIDE (DISC)	
110	3-931-902-03	ARM (ROLLER)	
111	3-936-756-01	ROLLER (D)	
112	3-321-393-01	WASHER, STOPPER	
* 113	3-939-139-01	SPACER	
114	3-931-916-01	SPRING (RA), TENSION	
* 115	A-3309-227-A	SERVO BOARD, COMPLETE	
* 116	3-007-530-01	BRACKET (MOTOR)	
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING	

5-4. CD MECHANISM SECTION (2)
(MG-363X-121)



Ref. No.	Part No.	Description	Remark
151	3-931-893-01	ARM, CHUCKING	
152	3-931-897-01	DAMPER (T)	
153	3-931-879-02	LEVER (D)	
* 154	3-913-404-11	RETAINER (DISC)	
155	3-931-894-01	BRACKET (CP)	
156	3-931-895-01	SPRING (CH), TENSION	
157	3-931-898-01	SPRING (FL), COMPRESSION	
158	3-019-805-01	SPRING (KF1), TENSION	
* 159	A-3291-677-G	CHASSIS (M) ASSY	
160	3-931-883-01	SPRING (TR), TENSION	
161	3-931-881-01	LEVER (LOCK)	
162	3-931-882-02	GEAR (MDL)	
163	3-007-537-01	WHEEL (U), WORM	
164	3-019-806-01	SPRING (KR1), TENSION	

5-5. CD MECHANISM SECTION (3)
(MG-363X-121)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 201	X-3374-022-1	CHASSIS (OP) (O/S) ASSY	
202	3-931-829-01	SPRING (SL), PLATE	
203	X-3371-504-1	BASE (DRIVING) ASSY	
204	3-931-832-01	GEAR (SL MIDWAY)	
* 205	1-659-835-12	LIMIT SW BOARD	
206	3-338-737-01	SCREW (2X3), + PS	
207	1-659-880-11	MOTOR FLEXIBLE BOARD	
* 208	1-659-834-11	SUB BOARD	
209	3-909-607-01	SCREW	
⚠ 210	8-820-010-03	PICK-UP, OPTICAL KSS-521A/Q-NP	
211	3-931-834-01	SPRING (FEED), PLATE	
212	1-659-881-11	PICK-UP FLEXIBLE BOARD	
213	A-3291-669-A	SHAFT (FEED) ASSY	
M901	X-3371-664-2	MOTOR ASSY (SPINDLE)	
M902	A-3291-674-A	MOTOR ASSY, SLED	

SECTION 6
ELECTRICAL PARTS LIST

DISC IN SW **DISPLAY**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-659-836-11	DISC IN SW BOARD			
		**********			
		< SWITCH >			
SW1	1-572-288-11	SWITCH, PUSH (DISC IN)			
SW2	1-572-288-11	SWITCH, PUSH (SELF)			
**********					
		DISPLAY BOARD			
		**********			
*	3-009-335-02	PLATE (LCD), LIGHT GUIDE			
*	3-009-337-01	HOLDER (LCD)			
*	3-009-341-01	SHEET (LCD)			
*	3-009-371-01	BRACKET (PCB)			
*	3-014-202-01	BRACKET (LCD)			
		< CAPACITOR >			
C851	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C852	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C853	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CNP801	1-764-423-11	PIN, CONNECTOR 12P			
* CNP802	1-779-129-11	PIN, CONNECTOR 3P			
		< DIODE >			
D851	8-719-976-99	DIODE DTZ5.1B			
D852	8-719-052-61	LED SLR-342PGA47 (SENS)			
D853	8-719-052-61	LED SLR-342PGA47 (⏏)			
D854	8-719-052-61	LED SLR-342PGA47 (A.MEM)			
D855	8-719-052-61	LED SLR-342PGA47 (6)			
D856	8-719-052-61	LED SLR-342PGA47 (2/REPEAT)			
D857	8-719-052-61	LED SLR-342PGA47 (3/SHUF)			
D858	8-719-052-61	LED SLR-342PGA47 (4)			
D859	8-719-064-19	LED SLR-342PG (5)			
D860	8-719-052-61	LED SLR-342PGA47 (SEL)			
D861	8-719-052-61	LED SLR-342PGA47 (MODE)			
D862	8-719-052-61	LED SLR-342PGA47 (SOURCE)			
D863	8-719-052-61	LED SLR-342PGA47 (+)			
D864	8-719-052-61	LED SLR-342PGA47 (ATT)			
D865	8-719-052-61	LED SLR-342PGA47 (-)			
D868	8-719-052-61	LED SLR-342PGA47 (DSPL)			
D869	8-719-052-61	LED SLR-342PGA47 (OFF)			
D870	8-719-052-61	LED SLR-342PGA47 (1/INTRO)			
D872	8-719-105-99	DIODE RD6.2M-B1			
D873	8-719-105-99	DIODE RD6.2M-B1			
D874	8-719-105-99	DIODE RD6.2M-B1			
D875	8-719-105-99	DIODE RD6.2M-B1			
		< IC >			
IC801	8-759-369-90	IC LC75822ED			
		< JUMPER RESISTOR >			
JR802	1-216-295-00	SHORT	0		
JR804	1-216-296-00	SHORT	0		
JR805	1-216-296-00	SHORT	0		
JR806	1-216-296-00	SHORT	0		
JR807	1-216-296-00	SHORT	0		
JR808	1-216-296-00	SHORT	0		
JR809	1-216-296-00	SHORT	0		
JR810	1-216-296-00	SHORT	0		
JR811	1-216-296-00	SHORT	0		
JR812	1-216-296-00	SHORT	0		
JR816	1-216-295-00	SHORT	0		
JR817	1-216-295-00	SHORT	0		
JR818	1-216-295-00	SHORT	0		
		< LIQUID CRYSTAL DISPLAY >			
LCD800	1-803-140-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL801	1-517-677-11	LAMP, PILOT			
PL802	1-517-677-11	LAMP, PILOT			
		< RESISTOR >			
R841	1-216-193-00	RES,CHIP	620	5%	1/8W
R842	1-216-193-00	RES,CHIP	620	5%	1/8W
R851	1-216-090-00	METAL CHIP	51K	5%	1/10W
R852	1-216-049-11	RES,CHIP	1K	5%	1/10W
R854	1-247-808-11	CARBON	110	5%	1/4W
R855	1-247-808-11	CARBON	110	5%	1/4W
R856	1-247-818-11	CARBON	300	5%	1/4W
R857	1-247-818-11	CARBON	300	5%	1/4W
R859	1-247-818-11	CARBON	300	5%	1/4W
R860	1-247-822-11	CARBON	430	5%	1/4W
R861	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R862	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R863	1-247-843-11	CARBON	3.3K	5%	1/4W
R864	1-216-067-00	METAL CHIP	5.6K	5%	1/10W

DISPLAY **DISPLAY SUB** **LIMIT SW** **LOAD SW** **MAIN**

Ref. No.	Part No.	Description			Remark
R865	1-249-429-11	CARBON	10K	5%	1/4W
R871	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R872	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R873	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R874	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R875	1-216-073-00	METAL CHIP	10K	5%	1/10W
R876	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R877	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R878	1-247-843-11	CARBON	3.3K	5%	1/4W
R879	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R880	1-216-073-00	METAL CHIP	10K	5%	1/10W
R881	1-216-083-00	METAL CHIP	27K	5%	1/10W
R882	1-247-808-11	CARBON	110	5%	1/4W
		< SWITCH >			
S801	1-572-704-31	SWITCH, KEY BOARD (⏏)			
S802	1-572-704-31	SWITCH, KEY BOARD (A.MEM)			
S803	1-572-704-31	SWITCH, KEY BOARD (SENS)			
S804	1-572-704-31	SWITCH, KEY BOARD (4)			
S805	1-572-704-31	SWITCH, KEY BOARD (5)			
S806	1-572-704-31	SWITCH, KEY BOARD (6)			
S808	1-572-704-31	SWITCH, KEY BOARD (SOURCE)			
S809	1-572-704-31	SWITCH, KEY BOARD (MODE)			
S811	1-572-704-31	SWITCH, KEY BOARD (- ⏮ ◀◀ (SEEK/AMS))			
S812	1-572-704-31	SWITCH, KEY BOARD (SEL)			
S813	1-572-704-31	SWITCH, KEY BOARD (+)			
S815	1-572-704-31	SWITCH, KEY BOARD (OFF)			
S816	1-572-704-31	SWITCH, KEY BOARD (ATT)			
S817	1-572-704-31	SWITCH, KEY BOARD (-)			
S818	1-572-704-31	SWITCH, KEY BOARD (DSPL)			
S819	1-572-704-31	SWITCH, KEY BOARD (1/INTRO)			
S820	1-572-704-31	SWITCH, KEY BOARD (2/REPEAT)			
S821	1-572-704-31	SWITCH, KEY BOARD (3/SHUF)			
**********					
		DISPLAY SUB BOARD			
		**********			
		< DIODE >			
D866	8-719-052-61	LED SLR-342PGA47 (- ⏮ ◀◀ (SEEK/AMS))			
D867	8-719-052-61	LED SLR-342PGA47 (+ ⏭ ▶▶ (SEEK/AMS))			
		< SWITCH >			
S810	1-572-704-31	SWITCH, KEY BOARD (+ ⏭ ▶▶ (SEEK/AMS))			
**********					
*	1-659-835-12	LIMIT SW BOARD			
		**********			
		< SWITCH >			
SW3	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)			
**********					

Ref. No.	Part No.	Description			Remark
*	1-659-837-11	LOAD SW BOARD			
		**********			
		< SWITCH >			
SW4	1-572-288-11	SWITCH, PUSH (DOWN)			
**********					
*	A-3294-426-A	MAIN BOARD, COMPLETE			
		**********			
*	3-009-353-11	HEAT SINK			
*	3-920-529-01	BRACKET (REG)			
*	3-931-260-01	BRACKET (IC)			
	7-685-792-09	SCREW +PTT 2.6X6 (S)			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
		< CAPACITOR >			
C101	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C102	1-164-346-11	CERAMIC CHIP	1uF		16V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V
C104	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C105	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C106	1-126-157-11	ELECT	10uF	20%	16V
C107	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C108	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C109	1-126-157-11	ELECT	10uF	20%	16V
C110	1-126-157-11	ELECT	10uF	20%	16V
C111	1-126-157-11	ELECT	10uF	20%	16V
C112	1-126-157-11	ELECT	10uF	20%	16V
C113	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C115	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C122	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C124	1-124-234-00	ELECT	22uF	20%	16V
C125	1-124-234-00	ELECT	22uF	20%	16V
C126	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C127	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C133	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C201	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C202	1-164-346-11	CERAMIC CHIP	1uF		16V
C203	1-164-346-11	CERAMIC CHIP	1uF		16V
C204	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C205	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C206	1-126-157-11	ELECT	10uF	20%	16V
C207	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C208	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C209	1-126-157-11	ELECT	10uF	20%	16V
C210	1-126-157-11	ELECT	10uF	20%	16V
C211	1-126-157-11	ELECT	10uF	20%	16V
C212	1-126-157-11	ELECT	10uF	20%	16V
C213	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C214	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C215	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C222	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V

Ref. No.	Part No.	Description			Remark
C224	1-124-234-00	ELECT	22uF	20%	16V
C225	1-124-234-00	ELECT	22uF	20%	16V
C226	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C227	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C233	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C401	1-126-768-11	ELECT	2200uF	20%	16V
C402	1-164-346-11	CERAMIC CHIP	1uF		16V
C404	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C405	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C406	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C407	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C408	1-124-242-00	ELECT	33uF	20%	25V
C409	1-126-160-11	ELECT	1uF	20%	50V
C416	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C418	1-126-162-11	ELECT	3.3uF	20%	50V
C419	1-126-176-11	ELECT	220uF	20%	10V
C420	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C434	1-164-346-11	CERAMIC CHIP	1uF		16V
C435	1-126-163-11	ELECT	4.7uF	20%	50V
C601	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C616	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C617	1-126-382-11	ELECT	100uF	20%	16V
C619	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C620	1-124-257-00	ELECT	2.2uF	20%	50V
C621	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C622	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C624	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C626	1-128-551-11	ELECT	22uF	20%	25V
C627	1-126-967-11	ELECT	47uF	20%	16V
C628	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C629	1-126-967-11	ELECT	47uF	20%	16V
C636	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C637	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C700	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C701	1-124-584-00	ELECT	100uF	20%	10V
C704	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C705	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C706	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C707	1-128-057-11	ELECT	330uF	20%	6.3V
C711	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C712	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C713	1-162-294-31	CERAMIC	0.001uF	10%	50V
C714	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C715	1-162-294-31	CERAMIC	0.001uF	10%	50V
C716	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C720	1-162-306-11	CERAMIC	0.01uF	20%	16V
C721	1-162-306-11	CERAMIC	0.01uF	20%	16V
C722	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C723	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C724	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C725	1-162-294-31	CERAMIC	0.001uF	10%	50V
C727	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C801	1-162-282-31	CERAMIC	100PF	10%	50V
C802	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C803	1-162-282-31	CERAMIC	100PF	10%	50V
C804	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C805	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C806	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C807	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C808	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C818	1-162-286-21	CERAMIC	220PF	10%	50V
C821	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C903	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C907	1-110-654-11	ELECT(BLOCK)	0.047F		5.5V
C912	1-128-551-11	ELECT	22uF	20%	25V
C913	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C914	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C916	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C917	1-124-465-00	ELECT	0.47uF	20%	50V
C918	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C922	1-126-162-11	ELECT	3.3uF	20%	50V
C923	1-124-257-00	ELECT	2.2uF	20%	50V
C924	1-124-234-00	ELECT	22uF	20%	16V
		< JACK >			
CNJ600	1-779-005-11	JACK (ANTENNA)			
		< CONNECTOR >			
CNP501	1-774-701-11	PIN, CONNECTOR 16P			
CNP700	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P			
CNP800	1-764-422-11	PLUG, CONNECTOR 12P			
		< DISCHARGE GAP >			
CP601	1-519-504-11	GAP, DISCHARGE			
		< DIODE >			
D400	8-719-109-71	DIODE RD3.9ES-B1			
D401	8-719-986-73	DIODE RB441Q			
D411	8-719-991-33	DIODE 1SS133T-77			
D638	8-719-991-33	DIODE 1SS133T-77			
D803	8-719-991-33	DIODE 1SS133T-77			
D804	8-719-991-33	DIODE 1SS133T-77			
D805	8-719-991-33	DIODE 1SS133T-77			
D810	8-719-991-33	DIODE 1SS133T-77			
D811	8-719-109-93	DIODE RD6.2ESB2			
D812	8-719-109-93	DIODE RD6.2ESB2			
D813	8-719-109-93	DIODE RD6.2ESB2			
D814	8-719-109-93	DIODE RD6.2ESB2			
D815	8-719-109-93	DIODE RD6.2ESB2			
D816	8-719-109-93	DIODE RD6.2ESB2			
D817	8-719-109-93	DIODE RD6.2ESB2			
D818	8-719-109-93	DIODE RD6.2ESB2			
D901	8-719-923-92	DIODE MTZJ-T-77-16B			
D903	8-719-109-93	DIODE RD6.2ESB2			
D905	8-719-923-93	DIODE MTZJ-T-77-16C			
D908	8-719-991-33	DIODE 1SS133T-77			

MAIN

Ref. No.	Part No.	Description	Remark
D909	8-719-921-74	DIODE MTZN-10A	
D911	8-719-109-89	DIODE RD5.6ESB2	
D912	8-719-109-93	DIODE RD6.2ESB2	
D913	8-719-049-38	DIODE 1N5404TU	
D914	8-719-991-33	DIODE 1SS133T-77	
D915	8-719-109-97	DIODE RD6.8ES-B2	
D918	8-719-929-15	DIODE MTZJ-T-77-9.1B	
D919	8-719-200-82	DIODE 11ES2	
		< FUSE >	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
		< IC >	
IC200	8-759-490-48	IC HA13158	
IC400	8-752-075-48	IC CXA1946AQ-T6	
IC700	8-759-498-36	IC SM5878AM-E2	
IC800	8-759-454-66	IC uPD17017GF-B28-3B9	
IC900	8-759-095-60	IC S-81250PG	
		< JUMPER RESISTOR >	
JR2	1-216-296-00	SHORT 0	
JR11	1-216-296-00	SHORT 0	
JR17	1-216-295-00	SHORT 0	
JR140	1-216-296-00	SHORT 0	
JR141	1-216-296-00	SHORT 0	
JR143	1-216-296-00	SHORT 0	
JR144	1-216-296-00	SHORT 0	
		< COIL >	
L400	1-410-513-11	INDUCTOR 22uH	
L600	1-410-513-11	INDUCTOR 22uH	
L601	1-410-521-11	INDUCTOR 100uH	
L700	1-410-521-11	INDUCTOR 100uH	
L800	1-410-513-11	INDUCTOR 22uH	
L801	1-410-513-11	INDUCTOR 22uH	
		< JACK >	
PJ400	1-764-697-11	JACK, PIN 4P (LINE OUT)	
		< TRANSISTOR >	
Q101	8-729-920-21	TRANSISTOR DTC314TKH04	
Q102	8-729-920-21	TRANSISTOR DTC314TKH04	
Q201	8-729-920-21	TRANSISTOR DTC314TKH04	
Q202	8-729-920-21	TRANSISTOR DTC314TKH04	
Q404	8-729-901-05	TRANSISTOR DTA124EK	
Q405	8-729-027-52	TRANSISTOR DTC124EKA-T146	
Q604	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q605	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q607	8-729-901-98	TRANSISTOR 2SA1036K-R	
Q608	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q609	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q804	8-729-901-05	TRANSISTOR DTA124EK	

Ref. No.	Part No.	Description	Remark
Q901	8-729-822-84	TRANSISTOR 2SB1202FAST	
Q903	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q904	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q905	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q907	8-729-901-05	TRANSISTOR DTA124EK	
Q911	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q912	8-729-101-07	TRANSISTOR 2SB798-DL	
Q913	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q914	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q915	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	
Q920	8-729-019-00	TRANSISTOR 2SD2394-G	
Q922	8-729-027-52	TRANSISTOR DTC124EKA-T146	
Q929	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	
		< RESISTOR >	
R101	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R102	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R103	1-249-425-11	CARBON 4.7K 5% 1/4W	
R104	1-216-065-00	RES,CHIP 4.7K 5% 1/10W	
R105	1-249-425-11	CARBON 4.7K 5% 1/4W	
R106	1-216-041-00	METAL CHIP 470 5% 1/10W	
R107	1-216-041-00	METAL CHIP 470 5% 1/10W	
R108	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R109	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R110	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R111	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R112	1-249-430-11	CARBON 12K 5% 1/4W	
R113	1-249-430-11	CARBON 12K 5% 1/4W	
R119	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R120	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R121	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R122	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R123	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R124	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R131	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R201	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R203	1-249-425-11	CARBON 4.7K 5% 1/4W	
R204	1-216-065-00	RES,CHIP 4.7K 5% 1/10W	
R205	1-249-425-11	CARBON 4.7K 5% 1/4W	
R206	1-216-041-00	METAL CHIP 470 5% 1/10W	
R207	1-216-041-00	METAL CHIP 470 5% 1/10W	
R208	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R209	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R210	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R211	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R212	1-249-430-11	CARBON 12K 5% 1/4W	
R213	1-249-430-11	CARBON 12K 5% 1/4W	
R219	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R220	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R221	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R222	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R223	1-216-079-00	METAL CHIP 18K 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R224	1-216-085-00	METAL CHIP	33K	5%	1/10W
R231	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R401	1-247-895-00	CARBON	470K	5%	1/4W
R411	1-216-049-11	RES,CHIP	1K	5%	1/10W
R416	1-216-089-00	RES,CHIP	47K	5%	1/10W
R601	1-216-105-00	RES,CHIP	220K	5%	1/10W
R603	1-216-089-00	RES,CHIP	47K	5%	1/10W
R620	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R626	1-216-089-00	RES,CHIP	47K	5%	1/10W
R627	1-216-049-11	RES,CHIP	1K	5%	1/10W
R628	1-216-073-00	METAL CHIP	10K	5%	1/10W
R629	1-216-049-11	RES,CHIP	1K	5%	1/10W
R630	1-216-063-00	RES,CHIP	3.9K	5%	1/10W
R631	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R633	1-216-081-00	METAL CHIP	22K	5%	1/10W
R634	1-216-206-00	RES,CHIP	2.2K	5%	1/8W
R640	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R643	1-216-089-00	RES,CHIP	47K	5%	1/10W
R646	1-216-091-00	METAL CHIP	56K	5%	1/10W
R700	1-216-001-00	METAL CHIP	10	5%	1/10W
R704	1-247-807-11	CARBON	100	5%	1/4W
R705	1-249-401-11	CARBON	47	5%	1/4W
R706	1-216-037-00	METAL CHIP	330	5%	1/10W
R708	1-216-027-00	METAL CHIP	120	5%	1/10W
R711	1-247-807-11	CARBON	100	5%	1/4W
R712	1-247-807-11	CARBON	100	5%	1/4W
R713	1-247-815-00	CARBON	220	5%	1/4W
R802	1-216-049-11	RES,CHIP	1K	5%	1/10W
R804	1-249-429-11	CARBON	10K	5%	1/4W
R808	1-249-429-11	CARBON	10K	5%	1/4W
R809	1-216-073-00	METAL CHIP	10K	5%	1/10W
R810	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R812	1-216-073-00	METAL CHIP	10K	5%	1/10W
R813	1-249-429-11	CARBON	10K	5%	1/4W
R814	1-216-073-00	METAL CHIP	10K	5%	1/10W
R818	1-216-089-00	RES,CHIP	47K	5%	1/10W
R819	1-249-418-11	CARBON	1.2K	5%	1/4W
R820	1-216-089-00	RES,CHIP	47K	5%	1/10W
R821	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R822	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R823	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R824	1-216-049-11	RES,CHIP	1K	5%	1/10W
R825	1-216-049-11	RES,CHIP	1K	5%	1/10W
R826	1-216-049-11	RES,CHIP	1K	5%	1/10W
R827	1-216-049-11	RES,CHIP	1K	5%	1/10W
R829	1-216-121-00	RES,CHIP	1M	5%	1/10W
R830	1-216-075-00	METAL CHIP	12K	5%	1/10W
R833	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R836	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R837	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R838	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R839	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R902	1-216-049-11	RES,CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R903	1-249-421-11	CARBON	2.2K	5%	1/4W
R904	1-249-421-11	CARBON	2.2K	5%	1/4W
R905	1-216-049-11	RES,CHIP	1K	5%	1/10W
R909	1-216-079-00	METAL CHIP	18K	5%	1/10W
R910	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R911	1-216-105-00	RES,CHIP	220K	5%	1/10W
R912	1-216-089-00	RES,CHIP	47K	5%	1/10W
R921	1-247-887-00	CARBON	220K	5%	1/4W
R922	1-216-049-11	RES,CHIP	1K	5%	1/10W
R923	1-249-421-11	CARBON	2.2K	5%	1/4W
R924	1-216-073-00	METAL CHIP	10K	5%	1/10W
R925	1-249-413-11	CARBON	470	5%	1/4W
R927	1-249-415-11	CARBON	680	5%	1/4W
R928	1-249-415-11	CARBON	680	5%	1/4W
R929	1-216-033-00	METAL CHIP	220	5%	1/10W
R930	1-249-435-11	CARBON	33K	5%	1/4W
R931	1-247-790-11	CARBON	20	5%	1/4W
R932	1-216-073-00	METAL CHIP	10K	5%	1/10W
R933	1-216-025-00	RES,CHIP	100	5%	1/10W
R938	1-216-073-00	METAL CHIP	10K	5%	1/10W
R950	1-249-408-11	CARBON	180	5%	1/4W
R951	1-249-408-11	CARBON	180	5%	1/4W
		< SWITCH >			
S900	1-762-638-11	SWITCH, TACTILE (RESET)			
		< THERMISTOR >			
TH900	1-809-148-11	THERMISTOR PTH8L07AR2R0M1B510			
		< TUNER >			
TU1	A-3309-805-A	TUNER ASSY			
		< VIBRATOR >			
X700	1-767-453-11	VIBRATOR, CRYSTAL (16.9344MHz)			
X800	1-760-223-11	VIBRATOR, CRYSTAL (4.5MHz)			
**********					
*	A-3309-227-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C2	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C4	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C5	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C6	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C7	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C9	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C10	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C11	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C12	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V

SERVO

Ref. No.	Part No.	Description			Remark
C13	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C14	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C15	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C16	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C17	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C18	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C19	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C20	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C21	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C22	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C23	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C24	1-163-259-11	CERAMIC CHIP	220PF	5%	50V
C25	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C26	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C27	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C28	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C29	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C30	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C31	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C32	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C33	1-124-779-00	ELECT CHIP	10uF	20%	16V
C34	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C35	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C36	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C37	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C38	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C39	1-126-204-11	ELECT CHIP	47uF	20%	16V
C40	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< CONNECTOR >			
CN1	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P			
CN2	1-565-728-11	CONNECTOR, FPC 17P			
CN3	1-770-347-21	CONNECTOR, FPC 6P			
		< IC >			
IC1	8-752-372-94	IC CXD2507AQ			
IC2	8-752-074-34	IC CXA1782BQ			
IC3	8-759-354-16	IC BA6796FP-T1			
		< JUMPER RESISTOR >			
JR1	1-216-296-00	SHORT	0		
JR2	1-216-296-00	SHORT	0		
JR3	1-216-296-00	SHORT	0		
JR4	1-216-296-00	SHORT	0		
JR5	1-216-296-00	SHORT	0		
JR6	1-216-296-00	SHORT	0		
JR7	1-216-296-00	SHORT	0		
JR8	1-216-296-00	SHORT	0		
JR9	1-216-296-00	SHORT	0		
JR10	1-216-296-00	SHORT	0		
JR11	1-216-296-00	SHORT	0		
JR12	1-216-296-00	SHORT	0		
JR13	1-216-296-00	SHORT	0		

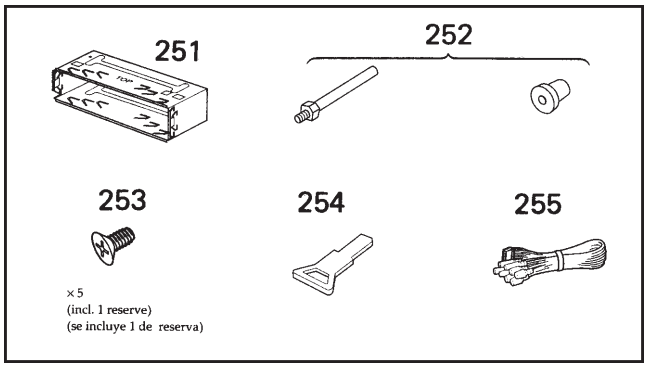
Ref. No.	Part No.	Description			Remark
JR14	1-216-296-00	SHORT	0		
JR15	1-216-296-00	SHORT	0		
JR16	1-216-296-00	SHORT	0		
JR17	1-216-296-00	SHORT	0		
JR18	1-216-296-00	SHORT	0		
JR19	1-216-296-00	SHORT	0		
JR20	1-216-296-00	SHORT	0		
JR21	1-216-296-00	SHORT	0		
JR22	1-216-296-00	SHORT	0		
JR23	1-216-296-00	SHORT	0		
JR24	1-216-296-00	SHORT	0		
JR25	1-216-296-00	SHORT	0		
JR26	1-216-296-00	SHORT	0		
JR27	1-216-296-00	SHORT	0		
JR28	1-216-296-00	SHORT	0		
JR29	1-216-296-00	SHORT	0		
JR30	1-216-296-00	SHORT	0		
JR31	1-216-296-00	SHORT	0		
JR32	1-216-296-00	SHORT	0		
JR33	1-216-296-00	SHORT	0		
JR34	1-216-296-00	SHORT	0		
JR35	1-216-296-00	SHORT	0		
JR36	1-216-296-00	SHORT	0		
JR37	1-216-296-00	SHORT	0		
JR38	1-216-296-00	SHORT	0		
JR39	1-216-296-00	SHORT	0		
JR40	1-216-296-00	SHORT	0		
JR41	1-216-296-00	SHORT	0		
JR43	1-216-296-00	SHORT	0		
JR44	1-216-296-00	SHORT	0		
JR45	1-216-296-00	SHORT	0		
JR46	1-216-296-00	SHORT	0		
		< COIL >			
L1	1-412-058-11	INDUCTOR CHIP	10uH		
L2	1-412-058-11	INDUCTOR CHIP	10uH		
L3	1-412-058-11	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q1	8-729-904-60	TRANSISTOR DTB113ZK			
Q2	8-729-904-86	TRANSISTOR 2SB1197K-Q			
		< RESISTOR >			
R1	1-216-073-00	METAL CHIP	10K	5%	1/10W
R2	1-216-097-00	RES,CHIP	100K	5%	1/10W
R3	1-216-121-00	RES,CHIP	1M	5%	1/10W
R4	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R5	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R6	1-216-073-00	METAL CHIP	10K	5%	1/10W
R7	1-216-009-00	METAL CHIP	22	5%	1/10W
R8	1-216-119-00	METAL CHIP	820K	5%	1/10W
R9	1-216-119-00	METAL CHIP	820K	5%	1/10W
R10	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R11	1-216-073-00	METAL CHIP	10K	5%	1/10W
R14	1-216-085-00	METAL CHIP	33K	5%	1/10W
R15	1-216-085-00	METAL CHIP	33K	5%	1/10W
R16	1-216-077-00	METAL CHIP	15K	5%	1/10W
R17	1-216-081-00	METAL CHIP	22K	5%	1/10W
R19	1-216-079-00	METAL CHIP	18K	5%	1/10W
R20	1-216-105-00	RES,CHIP	220K	5%	1/10W
R21	1-216-105-00	RES,CHIP	220K	5%	1/10W
R22	1-216-085-00	METAL CHIP	33K	5%	1/10W
R23	1-216-121-00	RES,CHIP	1M	5%	1/10W
R24	1-216-073-00	METAL CHIP	10K	5%	1/10W
R27	1-216-295-00	SHORT	0		
R28	1-216-101-00	METAL CHIP	150K	5%	1/10W
R29	1-216-097-00	RES,CHIP	100K	5%	1/10W
R30	1-216-097-00	RES,CHIP	100K	5%	1/10W
R31	1-216-081-00	METAL CHIP	22K	5%	1/10W
R32	1-216-109-00	METAL CHIP	330K	5%	1/10W
R33	1-216-105-00	RES,CHIP	220K	5%	1/10W
R34	1-216-009-00	METAL CHIP	22	5%	1/10W
R35	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R36	1-216-097-00	RES,CHIP	100K	5%	1/10W
R37	1-216-117-00	METAL CHIP	680K	5%	1/10W
R38	1-216-109-00	METAL CHIP	330K	5%	1/10W
R39	1-216-101-00	METAL CHIP	150K	5%	1/10W
R40	1-216-114-00	RES,CHIP	510K	5%	1/10W
R41	1-216-093-00	METAL CHIP	68K	5%	1/10W
R42	1-216-103-00	METAL CHIP	180K	5%	1/10W
R43	1-216-097-00	RES,CHIP	100K	5%	1/10W
R44	1-216-085-00	METAL CHIP	33K	5%	1/10W
R45	1-216-081-00	METAL CHIP	22K	5%	1/10W
R46	1-216-097-00	RES,CHIP	100K	5%	1/10W
R47	1-216-105-00	RES,CHIP	220K	5%	1/10W
R48	1-216-073-00	METAL CHIP	10K	5%	1/10W
R49	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R50	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R51	1-216-295-00	SHORT	0		
		< VARIABLE RESISTOR >			
RV1	1-238-091-11	RES, ADJ, CERMET 22K			
RV4	1-238-091-11	RES, ADJ, CERMET 22K			
**********					
*	1-659-834-11	SUB BOARD			
		**********			
		< CONNECTOR >			
CN1	1-770-347-21	CONNECTOR, FPC 6P			
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
12	1-769-786-91	CORD (WITH CONNECTOR) (POWER)	
207	1-659-880-11	MOTOR FLEXIBLE BOARD	
⚠210	8-820-010-03	PICK-UP, OPTICAL KSS-521A/Q-NP	
212	1-659-881-11	PICK-UP FLEXIBLE BOARD	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
M901	X-3371-664-2	MOTOR ASSY (SPINDLE)	
M902	A-3291-674-A	MOTOR ASSY, SLED	
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-862-579-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH)	
	3-862-580-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
#2	7-621-772-10	SCREW +B 2X4	
#3	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#4	7-685-793-09	SCREW +PTT 2.6X8 (S)	
#5	7-627-850-28	SCREW, PRECISION +P 1.4X3	
#6	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE 3	
#7	7-628-253-00	SCREW +PS 2X4	
#8	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3	
#9	7-627-553-17	SCREW, PRECISION +P 2X2 TYPE 3	
**********			

The components identified by mark ⚠or dotted line with mark. ⚠are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
251	3-014-370-21	FRAME, FITTING	
252	X-3366-405-1	SCREW ASSY (EXP), FITTING	
253	3-934-325-01	SCREW (+K 5X8 TP)	
254	3-388-078-01	KEY	
255	1-769-786-91	CORD (WITH CONNECTOR) (POWER)	



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